DESIGNING FOR SMART GROWTH

CREATING GREAT PLACES IN THE SAN DIEGO REGION

SANDAG

June 2009

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SANDAG

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CHAPTER 1
INTRODUCTION

The San Diego region's built environment is in a constant state of change. Every year, old buildings are renovated; functionally obsolete buildings are replaced with new ones; and vacant sites are developed. In some places, communities have decided that new development should use land more intensively than in the past, so the community can accommodate growth in developed areas rather than sprawling outward. This approach supports the basic principles of smart growth by taking advantage of existing infrastructure and strengthening existing neighborhoods. It also results in a more sustainable land use pattern that enables people to drive less.

SANDAG's *Regional Comprehensive Plan* (RCP), adopted in 2004, offers a vision for change in the San Diego region that strongly emphasizes sustainability and smart growth. It also underscores the importance of high-quality urban design, acknowledging that higher-intensity infill development can win acceptance with members of the public only if it is designed well. The RCP notes that good design "can be the difference between a sense of overcrowding and a feeling of vibrancy." To ensure that new infill development has high-quality design, the RCP calls for SANDAG to prepare a set of smart growth design guidelines. *Designing for Smart Growth* fulfills the RCP's vision.

1.1 Purpose of the Guidelines

This document provides design guidelines for infill development throughout the San Diego region. It is a key part of SANDAG's Smart Growth Tool Box, which includes both planning and financing tools. While this document focuses on guiding new development within the areas shown on SANDAG's Smart Growth Concept Map, many of the design guidelines can be applied in any part of the San Diego region.

The guidelines in this document are based on best practices from communities throughout the San Diego region, as well as other cities in California and throughout the United States. Many of these guidelines have been illustrated by showing examples from the San Diego region; however, this document also provides examples from cities outside of the region.

This document is not meant to dictate the scale or density of new development. Rather, it defines broad principles that can be applied to the many different types of communities in the San Diego region, from the low-rise buildings and lower densities found in rural towns to the higher-intensity development found in town centers. The principles in this document can also be applied to a wide variety of development projects, including small-scale infill development that includes only one or two buildings; new neighborhoods that are built on large infill sites; and public improvements, such as streetscape projects and civic buildings, that are completed by local jurisdictions.

1.2 Principles of Smart Growth

Smart growth development is guided by a set of principles that promote strong communities with a range of opportunities for all residents. These principles ensure a spectrum of housing, employment and transportation choices within walkable and livable neighborhoods.

See Also
Regional Comprehensive Plan

The following sections explain smart growth's ten most basic principles, which shaped SANDAG's *Regional Comprehensive Plan*. The design guidelines in this document are intended to show how many of these principles can be put into practice as new development takes place in the San Diego region.

1.2.1 Mixed Land Uses

The availability of stores, offices and residences in close proximity allows residents to work and shop close to home. A mixture of land uses promotes job creation, encourages healthy lifestyles and reduces dependence on the automobile.

1.2.2 Compact Development

Building compactly minimizes the amount of land that is needed to accommodate new homes, offices and stores. As a result, more land can be preserved as open space and for recreation. Compact development also increases the viability of public transit by placing a larger number of potential riders near transit lines.

The Uptown project in San Diego is an example of compact development.

1.2.3 Range of Housing Opportunities

Great communities include a diverse range of residents. Communities with a variety of housing types, densities and levels of affordability meet the needs of families, singles, and households of all income levels, as well as residents with unique needs, such as the elderly and people with disabilities.

1.2.4 Open Space and Farmland Preservation

Open spaces, ecological resources and agricultural land are necessary parts of a community. Preservation of natural open space helps to maintain water quality and protects animal and plant habitats. Ready access to the natural environment and undeveloped land also enhances people's quality of life, which can lead to increased economic prosperity.

San Elijo Lagoon is one of the region's many ecological resources.

1.2.5 Development in Existing Communities

Locating new development within existing communities reduces sprawl and conserves open space and agricultural land. In addition, infill development takes advantage of existing services and infrastructure while strengthening or revitalizing existing neighborhoods.

A bicycle path connects to San Diego's City Heights neighborhood.

1.2.6 Walkable and Bikeable Neighborhoods

Neighborhoods that are designed for pedestrians and bicyclists allow for less dependence on the automobile. In walkable, bikeable neighborhoods, difficult street crossings and dead-end streets are minimized, and pedestrians and bicyclists can use a network of well-connected streets, sidewalks and paths.

1.2.7 Distinctive, Attractive Communities

Communities with distinctive neighborhood character are desirable for residents, visitors and workers alike. They are designed with a careful understanding of their topographic and climatic contexts, and new development builds on the character of existing development.

Trolley lines and other transit routes connect the region's cities to one another.

1.2.8 Transportation Choices

Communities with a broad range of mobility options allow all residents to enjoy comfortable, independent lifestyles. Bicycle facilities and pedestrian-oriented streets are located throughout the community, and frequent, convenient public transit service provides a desirable alternative to the private automobile. These qualities can lead to improvements in community health and energy conservation, as well as reductions in greenhouse gas emissions.

A SANDAG grant helped fund the infrastructure for new development at the Grossmont Trolley Station in La Mesa.

1.2.9 Predictable Development Decisions

The successful implementation of smart growth depends upon investment from the private sector. Local governments can promote high-quality development by providing economic incentives for innovative projects, investing in the infrastructure improvements that are needed to support growth, and establishing efficient land use policies.

1.2.10 Community and Stakeholder Collaboration

Development should respond to the desires of the community. Collaboration between residents, developers and civic leaders promotes development that fits the community's sense of how it wants to grow.

1.3 How the Guidelines Were Developed

To create this document, SANDAG convened a ten-person *ad hoc* working group, which included city planners and engineers from local jurisdictions; citizens who previously served on SANDAG's Stakeholders Working Group; and SANDAG staff. The working group held eight meetings between May 2008 and January 2009 to discuss the appropriate format for the document and provide detailed guidance on the topics addressed in the design guidelines. Group discussions were based on a document outline that was originally prepared by SANDAG staff. Each discussion was facilitated by an expert from SANDAG's consultant team, which was led by Design, Community & Environment (DC&E).

Workshop participants in Encinitas discuss multimodal streets.

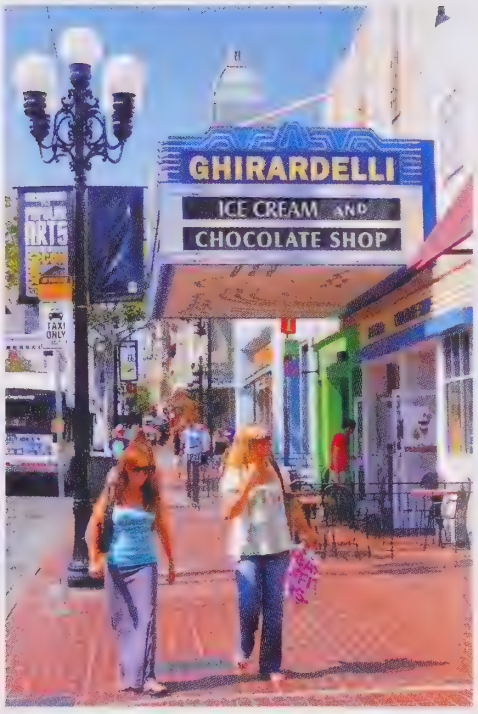
In October 2008, SANDAG held public outreach meetings in Encinitas and San Diego to solicit ideas and feedback about the project. Each meeting was a multi-hour open house that encouraged participation by the general public, with a special focus on planning and design professionals. The meetings featured multiple stations at which participants could learn more about basic principles of smart growth and urban design, as well as specific design issues that are addressed in this document. Participants were invited to submit comment cards at each station and to identify the design issues most important to smart growth. They also provided ideas about how this document can benefit their communities in the future.

SANDAG staff and the consultant team also met with SANDAG's Regional Planning Technical Working Group, Cities/County Transportation Advisory Committee and Regional Planning Committee to solicit their recommendations for the design guidelines. All three of these groups, as well as the general public, had the opportunity to review and comment on this document prior to its approval by SANDAG's Board of Directors.

Participants at the San Diego outreach meeting discuss a variety of design issues.

1.4 Relationship to Other Policies

This section explains how *Designing for Smart Growth* relates to other SANDAG policy documents, as well as plans adopted by local jurisdictions throughout the region.



This street in San Diego reflects the principles described in *Planning and Designing for Pedestrians.*

1.4.1 SANDAG Plans and Policies

This document fulfills the RCP's call for the creation of smart growth design guidelines for the San Diego region. It is intended to be consistent with the RCP and its Smart Growth Concept Map, along with other SANDAG plans and policies such as the *Regional Transportation Plan* and the *Regional Bicycle Plan*.

This document is also intended to be consistent with *Planning and Designing for Pedestrians,* which provides detailed recommendations for creating streets and neighborhoods that are pedestrian-friendly. This document builds on *Planning and Designing for Pedestrians* by addressing a broader range of issues related to the design of streets, neighborhoods and communities.

Finally, this document follows the principles described in *Designing for Transit*, which was published by the Metropolitan Transit Development Board, now called the Metropolitan Transit System. Unlike this document, *Designing for Transit* provides detailed engineering standards for new transit facilities.

Chula Vista has adopted a variety of plans that regulate the design of new development, such as this neighborhood in Otay Ranch.

1.4.2 Local Plans and Policies

Designing for Smart Growth is intended to serve as an inspiration for developers, designers, local governments and citizens throughout the San Diego region. It does not replace the Specific Plans, design guidelines, engineering standards and zoning ordinances that local jurisdictions have already adopted to regulate design in their communities. However, local jurisdictions in the San Diego region are encouraged to use this document as a starting point for their own planning efforts, as well as a reference to help them understand the key principles of creating great places.

1.5 Overview of the Guidelines

This document is organized into the following chapters:

- **Chapter 2: Designing for the Region** identifies the fundamental components of great communities and highlights cultural and geographic qualities that make the San Diego region unique.
- **Chapter 3: Site Design** provides guidelines related to where buildings are located on a site, how they fit with their surroundings, and how landscaping can be integrated with the site.
- **Chapter 4: Building Design** explains how new buildings can be designed to enhance community character and reflect their local context.
- **Chapter 5: Multimodal Streets** describes how to create streets that balance the needs of all modes of transportation, including pedestrians, bicyclists, vehicles and public transit.
- **Chapter 6: Transit Stations** discusses how off-street transit stations, such as commuter rail stations and bus depots, can be made safe, accessible and attractive.
- **Chapter 7: Civic Buildings** provides guidelines for designing civic buildings that contribute to a vibrant and active community.
- **Chapter 8: Parks and Civic Space** explains how to design different types of open spaces and integrate them with the neighborhood and community.
- **Chapter 9: Parking** recommends design and regulatory strategies to accommodate a reasonable amount of vehicle parking on a site, while also encouraging people to use other modes of travel and reduce vehicle trips.
- **Chapter 10: Smart Growth Scorecard** provides a series of questions to help local jurisdictions and community organizations determine whether a project incorporates the most fundamental principles in this document.

CHAPTER 2
DESIGNING FOR THE REGION

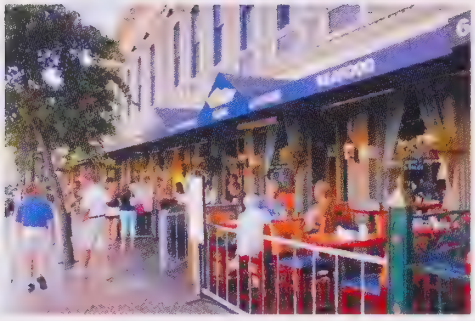
San Diego County is a unique region in California, with a range of climatic and topographical conditions and a culturally diverse population. The region has a larger land area than some states and contains varied natural environments, from coastal bluffs and mesas to interior mountains and deserts. It is a region with diverse types of places, in which a metropolitan tourist destination is a one-hour drive from a rural, alpine-style town. While the basic principles of high-quality design apply in all of these different places, developers must also be responsive to the region's varying built, natural and cultural contexts.

2.1 Components of Great Places

Some components of the built and natural environment are present in almost all truly great places, including those in the San Diego region.

2.1.1 Well-Defined Neighborhoods

Great places are made up of walkable neighborhoods that include homes, parks, schools and local-serving retail and commercial uses. Each neighborhood has well-defined edges and its own distinctive character. Each neighborhood also includes a focal point, such as an important park or civic building, which is within a short walk of most homes in the neighborhood.



A walkable street in San Diego helps to create great places.

Small shops in Coronado are around the corner from residences.

2.1.2 Mixed Land Uses

A mixture of stores, services, restaurants and homes is another component that contributes to the creation of a great place. Mixed-use development intensifies activity and interaction among people. The availability of stores, offices and residences in close proximity allows residents to work and shop close to home, and it creates "single visit" destinations that reduce the length and frequency of daily trips between home, work and services. These qualities can contribute to reductions in vehicle trips, automobile dependence and infrastructure costs.

Mixed-use development improves the walkability of San Diego's Uptown neighborhood.

In the context of SANDAG's Smart Growth Areas, the mix of uses should reflect the transit investment in each area and facilitate greater pedestrian activity, rather than being primarily automobile-oriented. The mix of uses should also include everyday destinations such as grocery stores, restaurants, coffee shops, day care centers and pharmacies.

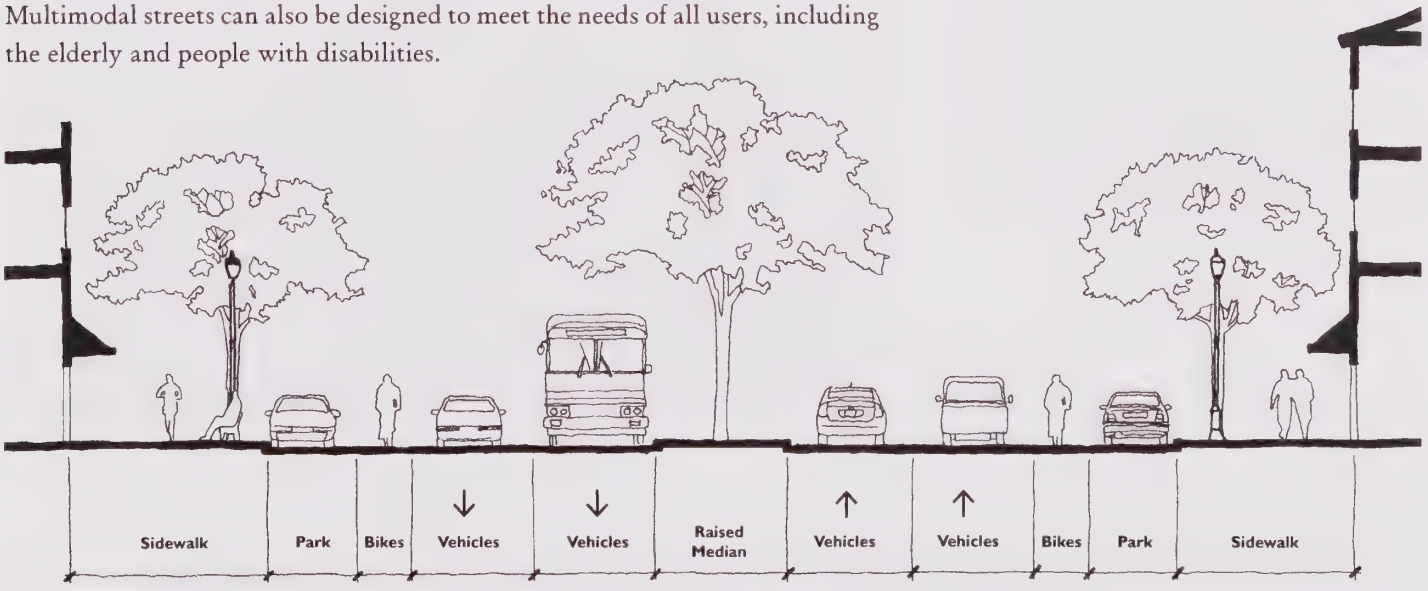
2.1.3 High-Quality Architecture

The architectural character of buildings must be visually interesting in order to create a great place. The architecture of buildings should be scaled to the pedestrian, with façades that contribute to appealing street frontages. Architectural design should also contribute to sustainability by orienting buildings to the sun, providing low-water landscaping and fixtures, and adhering to other principles of green building. All buildings should also be well maintained, which contributes to community pride.

Setbacks, façade articulation and thoughtful use of color make this residential building in La Jolla visually distinctive.

2.1.4 Multimodal Streets

Great places include streets that safely accommodate all modes of transportation, including pedestrians, bicyclists, automobiles and public transit. On a multimodal street, tree-lined sidewalks create an enjoyable, comfortable and safe place to walk, and buildings help to define the edges of the street. Multimodal streets can also be designed to meet the needs of all users, including the elderly and people with disabilities.



All modes of transportation and all users are accommodated on multimodal streets, one example of which is shown here.

Parks such as this one in San Diego create places for communities to come together.

2.1.5 Parks and Civic Space

Great places include public spaces that provide opportunities for passive and active recreation. All great places contain parks, plazas and a variety of open spaces for social gathering as well as community-wide recreation. When designed effectively, these spaces are accessible, secure and attractive, and they are located within a short walk of workers and residents. They also contribute to public health by providing places where people can exercise as well as relax.

2.1.6 Public Art

Public artwork that celebrates the local context is an important component of great places. Public art can transform everyday utility infrastructure into appealing public amenities, or it can express a community's values through the work of a local artist. Public art can contribute to personal involvement in a place and increase community pride.

Umbrella structures and tiled seats add a whimsical touch to this bus stop in San Diego.

A mural enlivens a pedestrian passage in La Mesa.

2.2 Distinctive Qualities of the Region

The San Diego region's topography, climatic conditions and international cultural setting combine to create a distinctive context for community design and placemaking.

2.2.1 Beaches and Coastline

The San Diego region includes over 70 miles of shoreline. Beaches, bays and wetlands define the region for residents and visitors alike. This large coastal zone has many features that influence local community character, including Pacific viewsheds, ocean sunsets, moderate air and water temperatures and numerous recreational options. Buildings can be sited and designed to take advantage of these unique features, and to preserve public access to the coast.

Visitors and residents alike associate the San Diego region with its beaches and coastline.

2.2.2 Mesas and Canyons

Owing to a unique geologic history and profile, much of the San Diego region lies atop exposed marine terraces of increasing elevation and distance from the coast. These mesas are divided by extensive canyon systems, many of which are important natural habitat areas that also help to give form to surrounding neighborhoods. Buildings and neighborhoods can be designed to respond to the unique topographic features that the mesas and canyons present.

Canyons such as Maple Canyon, in San Diego, contribute to the region's unique geography.

A view of distant mountains from La Mesa.

2.2.3 Mountain Ranges

Rising above San Diego's coastal terraces is the Peninsular Range, which is characterized by rocky mountains and canyons carved by rainwater runoff. From the Laguna Mountains to the Cuyumaca Mountains, this environment contains steep ranges and deep river valleys, all of which work to define the rugged character of inland areas in the San Diego region. The region's mountain environment, which is shaped by numerous microclimates, provides unique features that define local communities. A thoughtfully designed site can preserve public views of these natural features and respond to the distinct topography they create.

Pleasant weather and blue skies are characteristic of Coronado and the San Diego region.

2.2.4 Climate and Precipitation

The San Diego region's mild climate is one of the many qualities that attract visitors and new residents to the region. On average, the sun shines in the San Diego region for more than 70 percent of the total possible daylight hours each year. Nearly all rainstorms occur between October and March. Subtropical high pressure systems and coastal humidity combine to mitigate temperature extremes and contribute to the region's Mediterranean climate. The mild climate is interrupted by dry, hot Santa Ana winds from the east during late summer and early fall. The size and topography of the region contribute to significant climate variations between coastal and inland areas. Temperatures become more extreme inland, characterized by warmer summers and colder winters. On a daily basis, summer temperatures can vary by as much as 20 degrees between the coast and inland valleys. The design of landscaping should respond to these climatic conditions by making use of native and drought-tolerant species.

San Diego residents enjoy the City Heights Farmers' Market.

2.2.5 Multicultural Population

The diverse ethnic makeup of the San Diego region's approximately 3 million residents has been shaped by the region's Native American legacy, its historic role as a military base and its position on an international border. The region is home to more Native American reservations than any other county in the United States, and members of four tribal groups currently populate the region. Since 1990, migration from Mexico and the Pacific Rim has driven regional population growth. The regional and sub-regional cultural backgrounds of the community provide opportunities for architectural and design solutions that reflect those cultures.

San Diego's historic settlement patterns as a Spanish and Mexican territory, as well as recent immigration patterns, have left a diverse legacy of neighborhood development in the region. Moreover, the region shares over 60 miles of border with Mexico, resulting in one of the largest international metropolitan border regions in the world.

2.3 High-Quality Design in the Region

SANDAG has worked with local jurisdictions to identify Smart Growth Opportunity Areas throughout the region, where smart growth currently exists or where there are opportunities for future development that supports the principles of smart growth. SANDAG has also developed a set of "Smart Growth Place Types" that describe the desired nature and scale of development in each Smart Growth Area. New development in these areas can take cues from many examples of existing high-quality design in the San Diego region.

See Also
Regional Comprehensive Plan
Smart Growth Concept Map

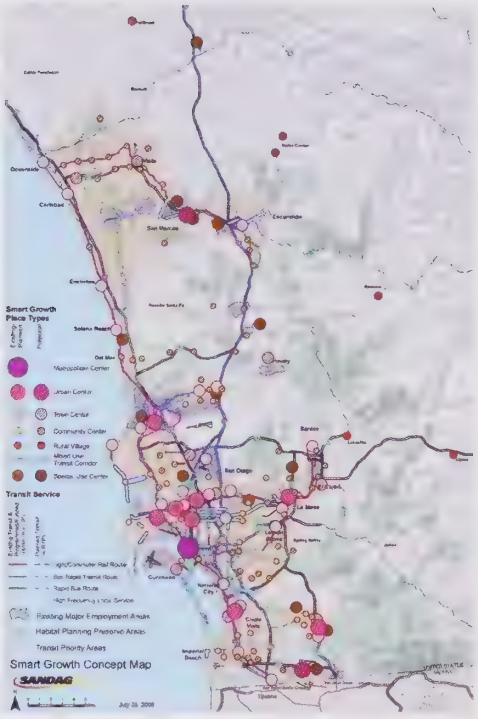
2.3.1 Smart Growth Areas and Place Types

SANDAG's *Regional Comprehensive Plan* recognizes that smart growth is not a "one size fits all" approach. It identifies seven Smart Growth Place Types, which are briefly described below. Each Place Type is served by a level of transit that is appropriate to its scale.

- **Metropolitan Center.** The Metropolitan Center is the region's primary business, commercial, civic and cultural destination with a regional draw and a highly interconnected network of transit services. It also provides a variety of residential uses and high levels of mixed uses.
- **Urban Center.** Urban Centers provide region-serving employment uses in combination with civic and cultural facilities, served by regional rail and local bus services. They also provide a range of residential communities that benefit from close proximity to transit and adjacent transit-serving uses.
- **Town Center.** Town Centers are areas with a mix of office and commercial development, including residential mixed-use, that draw from their subregional areas and are served by regional or corridor transit lines, local bus services or shuttle services.
- **Community Center.** These are areas with residential, commercial and mixed-use development that serve the surrounding neighborhoods, with high-frequency local bus service. They sometimes contain civic buildings.
- **Rural Village.** A Rural Village is an area with residential and commercial development that is concentrated in a village core in the County's unincorporated areas, allowing for local bus service.
- **Mixed-Use Transit Corridor.** This is a major linear transit corridor with residential, commercial and mixed-use development along the corridor, as well as similar development within one or two blocks of the arterial. A Mixed-Use Transit Corridor is served by high-frequency bus service.
- **Special Use Center.** These are areas dominated by employment uses with a regional draw, such as medical institutions or educational facilities. Special Use Centers generate trips throughout the day, are served by regional transit service and may have the potential for residential development.

The Gaslamp Quarter in San Diego is part of the region's Metropolitan Center.

Ramona is an example of a lower-intensity Rural Village.



The Smart Growth Concept Map shows opportunity areas that have been identified by local jurisdictions.

As shown in Table 2-1, each Place Type has guidelines for the appropriate scale of development. Along with targets for residential and employment densities, this helps to determine appropriate public transit service levels for each Place Type. While the scale and scope of the development potential differs between Place Types, all are defined by a high potential for diversity and activity, pedestrian accessibility and transit-oriented design. By coordinating transportation investment with land use and development decisions, the Smart Growth Place Types facilitate the creation of walkable communities, with more housing and transportation choices and better access to everyday places like jobs, entertainment and public spaces.

SANDAG has worked with local jurisdictions to apply the Place Types to a variety of Smart Growth Areas throughout the San Diego region. Some of these Smart Growth Areas are "existing/planned" areas that already meet SANDAG's targets or have adopted plans to achieve them. Others are "potential" areas that could meet these targets in the future. The RCP's Smart Growth Concept Map shows the location of each Smart Growth Area.

Table 2-1 **Smart Growth Place Types**

Place Type	General Character
Metropolitan Center	Mid- to high-rise residential, office, commercial, civic and cultural facilities
Urban Center	Mid- to high-rise employment centers with civic and cultural facilities
Town Center	Low- to mid-rise office, commercial and mixed-use
Community Center	Low- to mid-rise residential, commercial and mixed-use
Rural Village	Low-rise commercial and residential village core in unincorporated areas
Mixed-Use Transit Corridor	Low-, mid- and high-rise residential, commercial and mixed-use
Special Use Center	Low-, mid- and high-rise development with varied uses

Global Warming

Transportation accounts for 46 percent of the greenhouse gas emissions in the San Diego region—particularly carbon dioxide—that are responsible for global warming. In response to the threat of global warming, which will have significant negative impacts on California's environment and economy, the State of California is pioneering the effort to fight global warming with the passage of the Global Warming Solutions Act of 2006 (AB 32) and the recently passed Senate Bill 375. One important strategy that will help achieve the goals in this legislation is to shift development patterns from sprawling, automobile-dependent suburbs to compact communities. A natural result of this shift is decreased local dependence on the automobile.

This major transition from auto-centric development to walkable, transit-friendly neighborhoods can succeed only if new development helps to create vibrant, functional and safe places. Buildings, streets and public places must be located and designed to encourage pedestrian activity and support bicycle and transit ridership. The quality of their design must be high enough to create a truly desirable alternative to auto-oriented sprawl. *Designing for Smart Growth* identifies the fundamental principles of urban design that can help the San Diego region achieve these goals, creating long-term shifts in development patterns that will reduce the region's transportation-related greenhouse gas emissions.

2.3.2 Examples of High-Quality Design

The following pages show examples of places throughout the San Diego region that are defined by their high-quality, smart growth-oriented design. Older examples of development in these areas have helped establish the character of the San Diego region, while newer development is defining the future of sustainability and community design in the region. *Designing for Smart Growth* contains many additional images of high-quality design that already exists throughout the San Diego region.

Little Italy, City of San Diego (Metropolitan Center)

The Little Italy neighborhood of San Diego incorporates a number of new mixed-use and housing developments into the fabric of the neighborhood.

New buildings are designed to fit gracefully with one another.

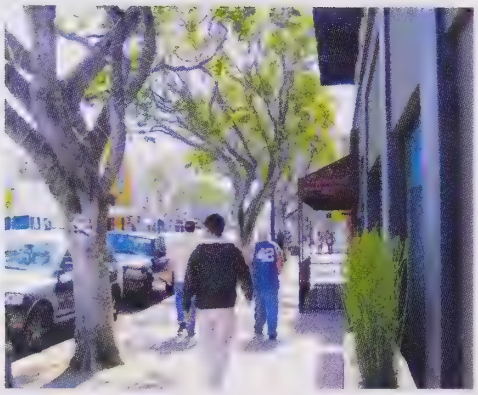
Entrances to new housing face the street.

The use of color adds visual interest to a building.

High-quality architecture strengthens the identity of the neighborhood.

Hillcrest, City of San Diego (Urban Center)

The Hillcrest area, with a mixture of high-quality new and old buildings, is a dynamic, pedestrian-oriented core of commercial and entertainment activity.



Large street trees help to create a pleasant and comfortable pedestrian realm.

Color accentuates and highlights a new building with underground parking.

Gateway signage contributes to community identity.

Downtown El Cajon (Town Center)

Streetscape improvements and redevelopment of a number of office and retail buildings have reinvigorated El Cajon's Main Street.

Wide sidewalks provide ample space for outdoor restaurant seating and create a walkable environment.

Arcades provide a comfortable public space.

Sensitive new development and façade improvements reflect the existing character of El Cajon.

Downtown Oceanside (Town Center)

A beautiful location, convenient transit connections, plentiful public space and carefully designed new development make Downtown Oceanside a lively and active place.

The Oceanside Pier provides public access to the ocean.

A downtown multimodal transit station encourages the use of public transportation.

A dedicated pedestrian path creates connections and enhances the character of the community.

Fallbrook, San Diego County (Rural Village)

The village core in Fallbrook reflects many of the same characteristics of high-quality design as larger and more urbanized places in the San Diego region.

This appealing public space provides a place for the community to gather.

Active storefronts and attractive landscaping contribute to an engaging pedestrian realm.

Architectural detail of new and renovated buildings reflects the village's character.

Bird Rock Neighborhood, La Jolla, City of San Diego (Mixed-Use Transit Corridor)

The Bird Rock neighborhood includes retail and housing along newly-redesigned La Jolla Boulevard, which provides bus service.

Recent streetscape improvements have been funded by a combination of SANDAG grants, city funds and developer fees.

The new design for La Jolla Boulevard meets the needs of bicyclists, pedestrians, buses and cars.

New development in the Bird Rock neighborhood contributes to an attractive public realm by providing pedestrian amenities such as outdoor seating.

Well-marked crosswalks and pedestrian refuge islands improve pedestrian safety and comfort.

2.4 Transformation of Existing Places

The San Diego region has many communities that are designed well and reflect the principles of smart growth. However, other places would benefit from new development and public improvements that would enhance their character while creating more walkable places. The following visual simulations show how eight existing places in the San Diego region could be transformed. These places are included in SANDAG's Smart Growth Concept Map. They were chosen by local planners and policy makers as places with significant potential for smart growth development.

2.4.1 Alpine Boulevard, Alpine (Rural Village)

Existing: Many commercial businesses line Alpine Boulevard, the primary commercial center for residents of Alpine and nearby rural communities. Currently, the street edge along Alpine Boulevard is often interrupted by vehicle entrances and parking. In addition, existing sidewalks stop and start, and crosswalks are not always present where they are needed.

Potential: The street edge has been defined by attractive buildings that face widened sidewalks. A dedicated bike lane has been added, along with clearly marked crosswalks, bulbouts and pedestrian refuge islands. Outdoor seating is also provided, creating a more welcoming pedestrian environment. The net effect is a commercial environment with more synergy between businesses because of their close proximity and pedestrian linkages.

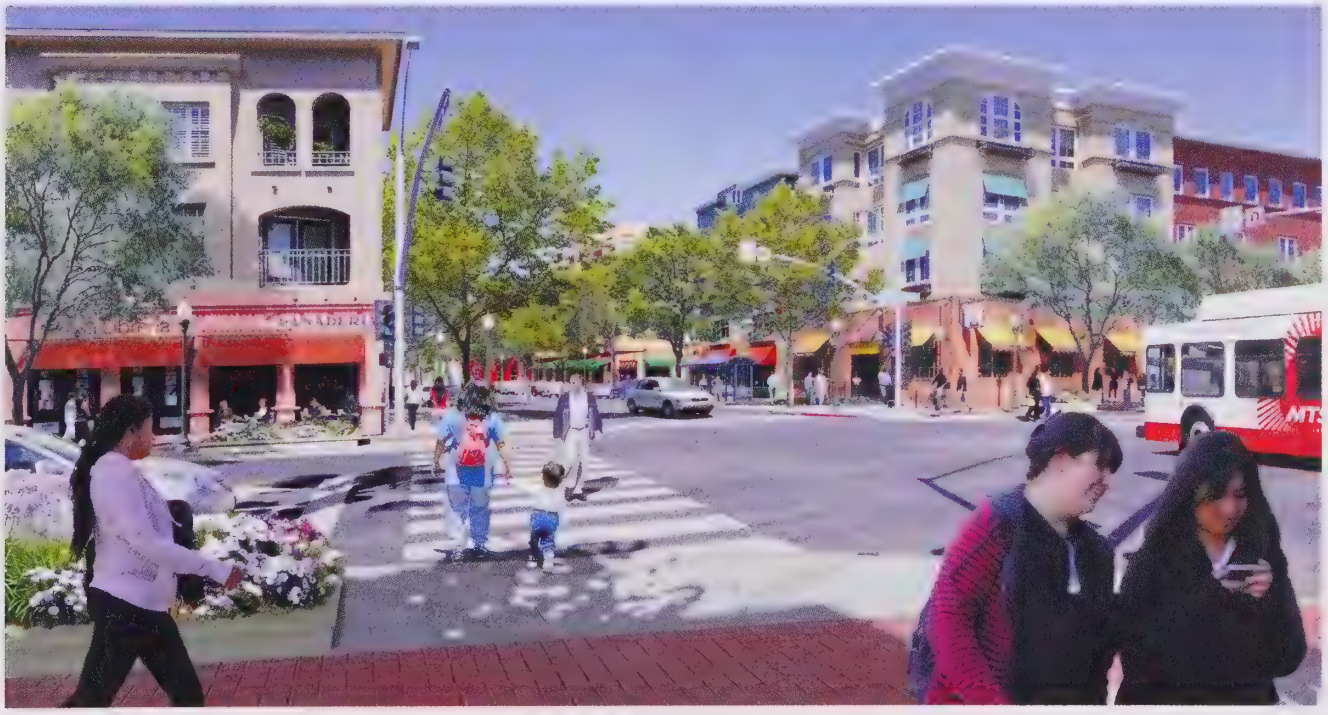
2.4.2 El Cajon Transit Center (Community Center)

Existing: Today, parking lots are a dominant feature of the landscape around the El Cajon Transit Center. A bicycle lane is present, but only in the northbound direction, and overly narrow sidewalks are crossed by many driveways.

Potential: In the constrained space between the street and the bus stops behind it, a small transit building with an arcade over the sidewalk and a pergola helps to enclose the street as a public space, yet affords views of the transit center behind. Other buildings oriented toward the sidewalks invite pedestrian activity. Bicycle lanes are present in both directions.

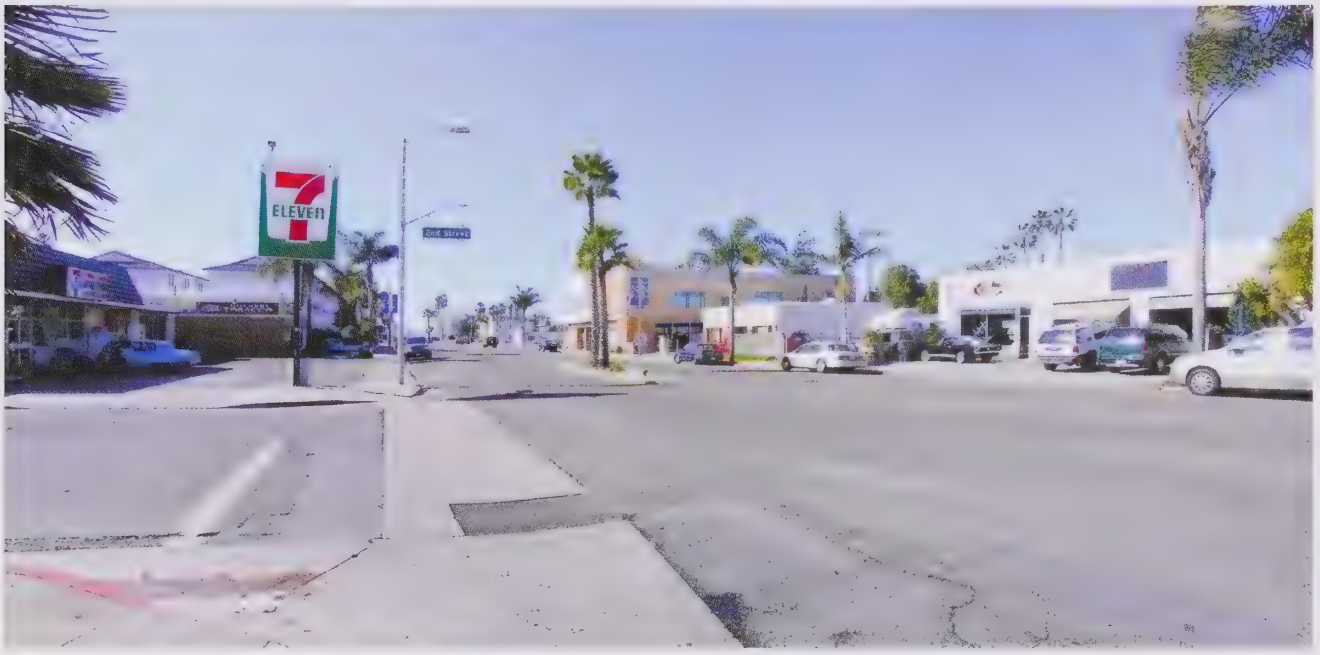
2.4.3 Barrio Logan, San Diego (Community Center)

Existing: Part of the Barrio Logan redevelopment project, Main Street, which intersects Cesar Chavez Parkway, is within a block of the Barrio Logan trolley stop, but serves neither as a commercial main street nor as a place that invites trolley ridership. A vacant lot at this prominent corner, along with the low-rise, nondescript industrial design, contribute to a relatively uninviting pedestrian environment.



Potential: Street narrowing creates space for attractive street trees and wide sidewalks, encouraging pedestrian activity. Inviting street lamps and outdoor seating further enhance the pedestrian experience. Buildings now face onto sidewalks, often with wide storefront windows and appealing architectural details.

2.4.4 Old Palm Avenue and Second Street, Imperial Beach (Mixed-Use Transit Corridor)



Existing: This underperforming commercial street has many shallow lots, making it essential to provide on-street parking. However, frequent curb cuts for driveways limit the amount of on-street parking and create a gap-toothed pattern of buildings along the street.

Potential: Corner bulbouts, distinctive paving treatments, widened sidewalks and palm trees add visual appeal while creating a better place to walk. Fewer curb cuts means safer sidewalks and space for more on-street parking. Two- and three-story buildings oriented to the sidewalk help to frame this walkable, mixed-use corridor.

2.4.5 Palm Avenue between Ninth and Tenth Streets, Imperial Beach (Community Center)

Existing: This portion of Palm Avenue is a wide, automobile-oriented arterial street, with three lanes of traffic in each direction. The street has no street trees along its edges, and many buildings are set back behind parking lots. Deep parcels create opportunities for increased density.

Potential: Palm Avenue is reconfigured as a multiway boulevard, with through traffic in the center lanes; side medians separate this faster-moving traffic from local access lanes, which also provide on-street parking and are comfortable for bicyclists. New development supports pedestrian activity. A forecourt provides an opportunity for outdoor dining.

2.4.6 Lemon Avenue, La Mesa (Town Center)

Existing: This area, located two blocks from the walkable main street of La Mesa Boulevard, has a mix of appealing historic buildings and undistinguished, low-slung 1960s buildings. Surface parking lots provide parking but occupy too much valuable land.

Potential: A new mixed-use parking structure consolidates dispersed parking lots, but has the appearance of a traditional mixed-use building. Ground-floor retail adds to the effect as well as unglazed window openings that ventilate parking decks on the upper floors. Street trees, pedestrian-scaled lighting and clearly marked crosswalks further enhance the street.

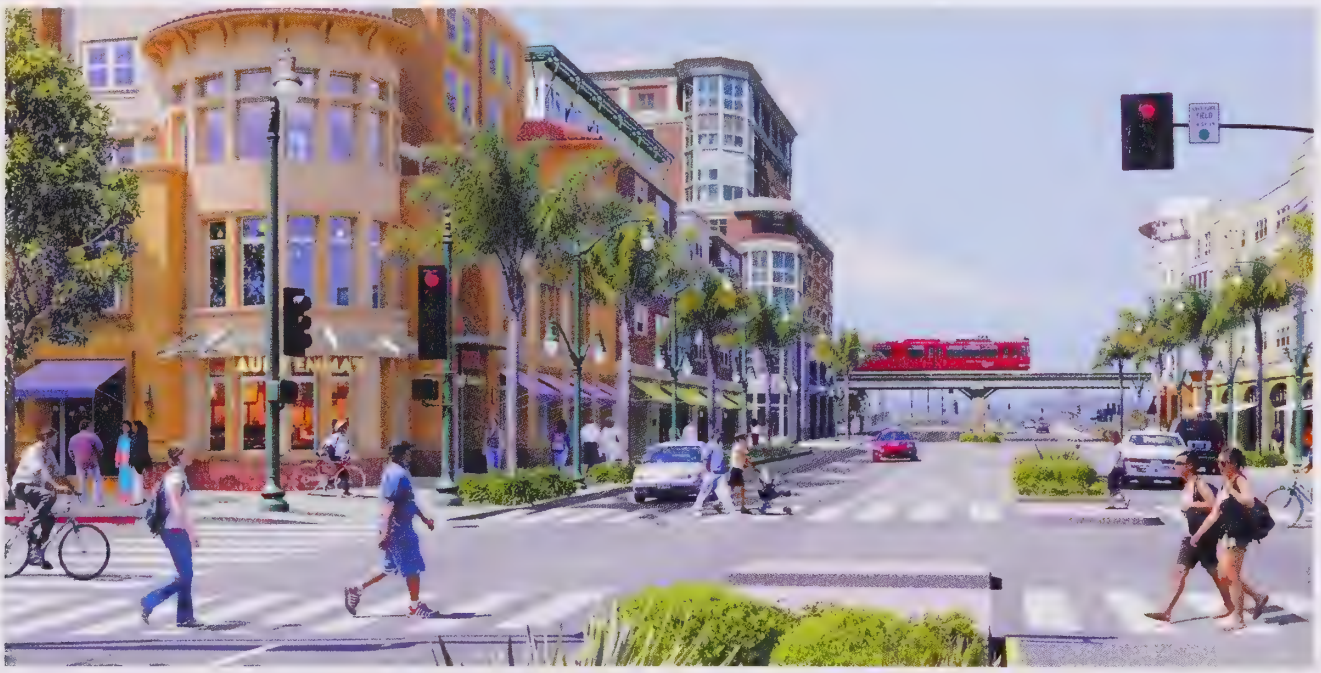
2.4.7 Escondido Transit Center (Town Center)

Existing: The area around the Escondido Transit Center, which faces Valley Parkway, is dominated by surface parking lots that do not support pedestrian activity. This one-way street also lacks a sidewalk on one side and does not have clear places for pedestrians to cross.

Potential: Higher-density development is provided to increase transit ridership and transform the Transit Center into a destination. A new plaza, fountain and outdoor seating, along with clearly-marked crosswalks, create a more appealing space for pedestrians.

2.4.8 E Street, Chula Vista (Urban Center)

Existing: This wide, auto-oriented street with narrow sidewalks and no on-street parking puts pedestrians uncomfortably close to moving cars. Crosswalks are not clearly marked, and the street has very little landscaping. The low-rise commercial development does not support transit ridership, even though a trolley station is nearby.



Potential: Higher-density, mixed-use development increases ridership at the nearby trolley station. In addition to retail storefronts that encourage pedestrian activity, street trees and attractive lighting have been provided. Pedestrian refuges in the street median, along with wider sidewalks with landscaping between pedestrians and cars, add to pedestrian comfort and safety. An elevated rail line allows trolley service to operate more efficiently.

CHAPTER 3
SITE DESIGN

Site design is the most basic component of the design process for any development project. It involves fundamental decisions about where buildings are located on a site, how they relate to their surroundings, and where space is provided for pedestrians, vehicles and bicyclists. Private development also shapes the public realm by defining the edges of the street. When new development is planned so that it emphasizes the needs of pedestrians, rather than vehicles, it has the power to reinvigorate the public realm.

3.1 Siting and Orientation

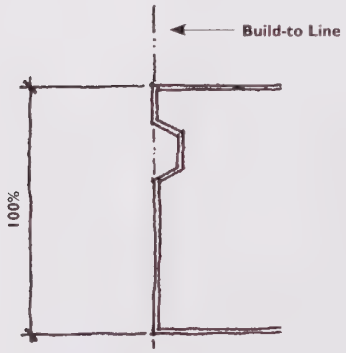
A successful site design must coordinate many different activities. Buildings must be located where they can connect to the public realm, but they must also be arranged within the site so that appropriate space is provided for parking, outdoor seating and other activities.

Buildings in Oakland, California, help to frame the public realm.

3.1.1 Orientation to the Street

Buildings should be highly visible and readily accessible from the sidewalk, encouraging people to walk from place to place.

- Orient buildings towards the street, so that they frame the pedestrian environment.
- Do not locate parking between buildings and the street edge.
- Place entrance doors and windows for retail uses fronting directly onto the street at ground level.
- Provide a place to enter the site or building directly from the sidewalk.
- Provide a high percentage of windows on the ground floor façades of commercial buildings to facilitate greater visual transparency.

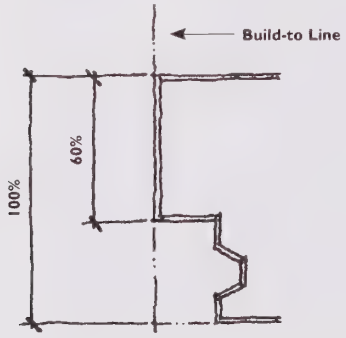


On some streets, the entire building should meet the back of the sidewalk, except for features such as recessed entrances.

3.1.2 Setbacks

Front setbacks or build-to lines set the amount of space, if any, that lies between a building and the sidewalk or street. They define the transition between private development and the public realm.

- Site buildings at the back of the sidewalk to provide a strong definition of the public realm.
- Consider setting portions of a building back from the street to create usable outdoor space. To ensure that the setback does not result in an excessive void along the street, use fences, walls, planters or landscaped areas to define the edge of the outdoor space.
- Where mature trees are present on a site, set back portions of buildings to preserve the trees.



On other streets, it is appropriate for part of the building to be set back from the sidewalk, creating space for amenities such as courtyards and outdoor seating areas.

A small setback creates space for outdoor dining at this restaurant in Healdsburg, California.

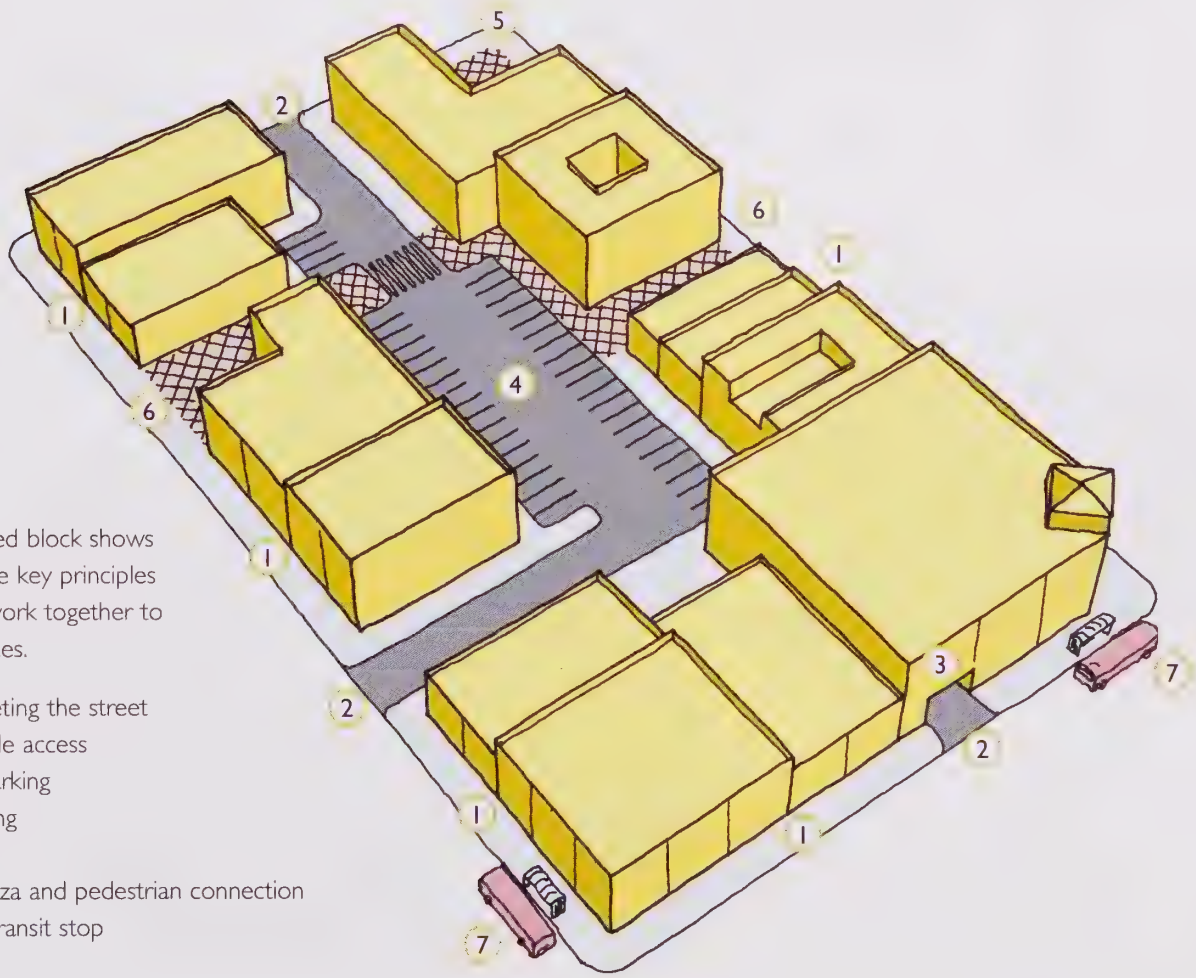
3.1.3 Building Mass

A site design must determine how each building's mass—its three-dimensional form—will fit within the site as a whole. The site design must strike a balance that provides a built edge to define the public realm, while not presenting an overwhelming face to the street.

- Develop a complex of buildings rather than a single large structure. Ensure that the spaces created between buildings can function as pedestrian plazas, courtyards and other outdoor gathering areas.
- Concentrate a site's building mass at the street edge. For multiple-story buildings, step the building back from the street edge at upper levels to allow sunlight into the street.
- Place a building's mass so that it responds to the surrounding development. Where necessary, provide a transition that relates to adjacent buildings.

See Also
"Change in Development Intensity" on page 38

As this building in San Diego becomes taller, it steps back to allow sunlight to enter the street.



This well-designed block shows how some of the key principles in this chapter work together to create great places.

① Buildings meeting the street
② Limited vehicle access
③ Structured parking
④ Surface parking
⑤ Corner plaza
⑥ Mid-block plaza and pedestrian connection
⑦ Convenient transit stop

A corner building in Mountain View, California, includes design features that highlight the site's prominence.

3.1.4 Corner Sites

Sites gain prominence when they are located at the intersection of two streets. More people pass by corner sites, and the buildings on these sites are more visible. The design of corner sites should acknowledge and celebrate this prominence, and it should help to define the edges of the street intersection.

- Place buildings located on street corners so that they meet the corner, or use a small setback to provide a public plaza with direct access to the building.
- Include special architectural and design features on buildings located at corners, such as taller building elements or architectural detail. Additional corner treatments might include a rounded or angled facet on a corner building entrance or an embedded corner tower.
- Locate the main entrance of corner buildings at the corner, where feasible.
- Do not establish parking areas at the corner of a corner site. Instead, provide parking behind the building.

See Also
"Plazas and Piazzas"
on page 92

3.1.5 Plazas and Open Space

A thoughtfully designed site can include small plazas, courtyards and other outdoor spaces. These spaces can create a visual connection to the public realm as well as a physical transition zone between the building and the street.

- Integrate semi-public outdoor spaces, such as plazas or courtyards, into commercial development where feasible to help support pedestrian activity and connect to the public realm.
- Design plazas and building forecourts to maximize circulation opportunities between adjacent uses.

A fountain provides a focal point for this plaza in Cathedral City, California.

The design of this site in Menlo Park, California, gives shape and character to public space.

- Provide landscaping and high-quality paving materials, such as stone, concrete or tile, for plazas and open spaces.
- Account for climatic factors such as sun orientation and prevailing winds when locating all open space areas.
- Place outdoor furniture, such as seating, low walls, trash receptacles, bike racks and other elements, in outdoor pedestrian spaces.
- For larger projects, develop a comprehensive open space network that includes plazas and other open space elements to connect different uses.
- Integrate adjacent land uses on a site into the open space areas and the paths that link them.
- Site buildings to define open space areas.
- Ensure that outdoor areas are visible from public streets and accessible from buildings, as well as streets and pedestrian and bicycle networks.
- Coordinate outdoor furniture with the design of the building.
- Use drought-tolerant plant materials that are consistent with the architectural design of the building.
- Use decorative tree grates in pedestrian areas.
- Where a plaza is adjacent to a parking area, provide landscaping for screening purposes.

A small plaza in Livermore, California, creates a welcoming environment for pedestrians.

Trees provide areas of shade for a corner plaza in the summer.

Deciduous trees allow for winter sun to penetrate into the plaza space.

See Also
"Transformation of Existing Places" on page 20

A formal seating area in San Diego makes this site more inviting to its users.

3.1.6 Outdoor Seating

By incorporating outdoor seating, a well-designed site can encourage foot traffic and provide places where people are encouraged to stop and linger. Some outdoor seating areas can be located within the interior of a site, for the enjoyment of people who live or work there. Depending on the site, there may also be opportunities to place outdoor seating closer to the public realm, especially if the site faces a scenic view. Many of the visual simulations in Chapter 2 illustrate how outdoor seating can be incorporated into a site.

- Incorporate seating into well-trafficked outdoor areas, to maximize opportunities for people to interact.
- Include formal seating, such as benches and chairs, along with informal seating, such as low walls and stairs, in all outdoor seating areas.
- Use movable seating where practical so that people can accommodate their own preferences and respond to the weather or time of day.
- Place seating to take advantage of scenic views towards cityscapes, parks, open space and the coast.
- Provide lighting to ensure that outdoor seating areas are safe places at night.

An informal seating area in Berkeley, California, allows people to stop and enjoy the public realm.

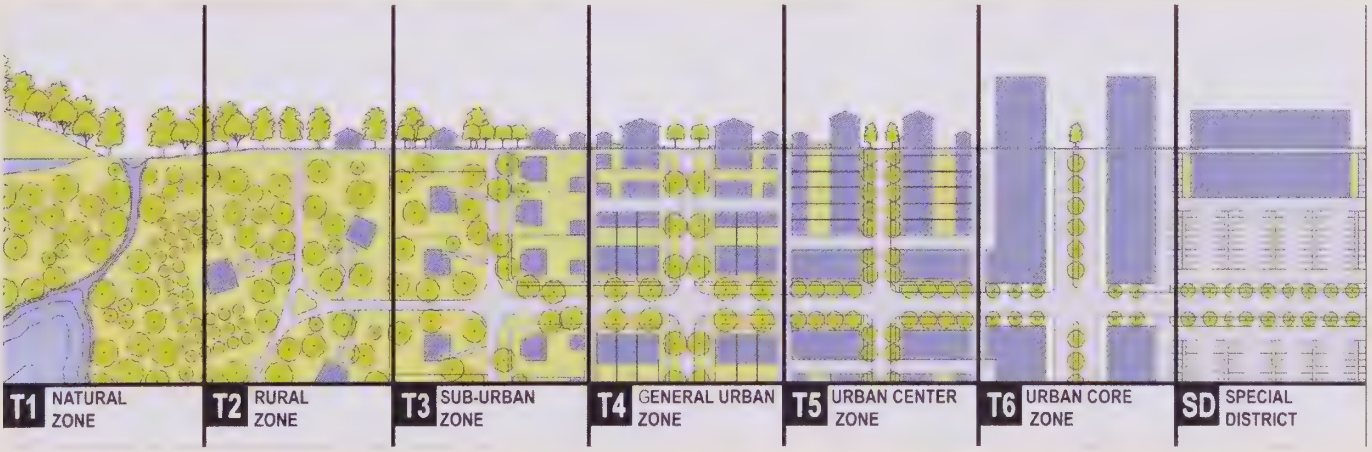
Form-based Codes

Typical zoning ordinances in use since early in the 20th century regulate land use on a parcel-by-parcel basis. They are largely proscriptive in that they state, often to excess, land uses that are not permitted on parcels within a specific zoning designation. This type of zoning regulates development so that it fits within specific floor-area ratios or residential densities. Therefore, it provides a high level of economic predictability for a property owner without establishing any certainty about the physical character of that development and how it might shape the public realm. It allows buildings to be designed as individual objects with no relationship to other buildings. In recent decades, design guidelines have emerged as a tool to obtain some level of design predictability and architectural quality, but guidelines are typically advisory rather than mandatory.

In recent years, however, a different approach to building regulations has emerged: the Form-Based Code (FBC). FBCs regulate how buildings—even on a parcel-by-parcel basis—establish the physical character of streets and public space. They achieve this through the use of illustrated standards for development, in addition to the quantitative values used in typical codes. In a community developed under an FBC, buildings delineate the form of public space and have a relationship to other buildings in the shaping of that space. The standards in an FBC are calibrated to the specific context of a community and are often drafted during multi-day community-wide charrettes or design-intensive workshops. Although an FBC can be adopted for an entire city, it is usually adopted as an overlay or add-on to a traditional zoning ordinance so that it can be applied to a particular part of a city, such as a downtown area or commercial corridor.

The FBC is developed on the framework of a Regulating Plan, which classifies an area into a series of different types of places and provides a spatial structure to the development that fronts those streets. That spatial structure is the organizing feature for the town or community for which the FBC is prepared. This ability to respond to virtually any physical context is a large part of why FBCs can be used in the practice of place-based planning. By focusing on the framing of public space, the enforcement of community character and the predictability of urban form, FBCs can be a powerful tool for implementing smart growth principles in the development of communities.

Form-based codes are a tool that jurisdictions can use to implement many of the guidelines presented in this document; they are effective in establishing a basic framework of good urbanism. However, additional planning and design guidance is often necessary to ensure the high architectural quality of individual projects.



The transect establishes a series of typologies from rural to urban core and is the primary tool used to establish the Regulating Plan.
Source: Duany Plater-Zyberk & Company

3.2 Neighborhood Context

Many outstanding communities in the San Diego region contain opportunities for development on vacant or underutilized sites. The design of infill development must be sensitive to the existing neighborhood context and positively contribute to the public realm.

The design of these townhouses in Santa Cruz, California, helps make them compatible with a nearby neighborhood.

3.2.1 Compatibility

The compatibility of new development with existing development is especially important when new development includes new uses or higher densities. Good site design must carefully balance the need to respond to the existing context with the need to introduce new development that can improve the character and the scale of the surrounding area.

- Design buildings so that they have heights, massing, setbacks and design character that are compatible with surrounding buildings.
- Incorporate the area's typical landscape treatments into the site design to connect new development to the existing context.

New development in La Jolla frames an existing scenic viewshed.

3.2.2 Views

A view of a beautiful or striking landscape feature is a valuable community asset. A view can function as a way-finding tool, as well as influence the identity of a community. New development should capitalize on site-specific opportunities by maintaining existing views and framing new views.

- Place buildings to frame significant views by ensuring that gaps between buildings provide a view of a significant feature from a publicly-accessible vantage point.
- Create an interesting focal point on sites that are the terminus of a major visual axis, such as at the terminus of a street, trail or multi-use path.

3.2.3 Coordination with Adjacent Properties

Coordination between multiple sites can help to develop a consistent community character. New projects need to consider adjacent sites to identify potential opportunities for the coordination of building programs, site amenities and functional operations.

- Develop shared facilities such as driveways, parking areas, plazas and walkways in order to increase pedestrian access.
- Coordinate site designs with existing development on adjoining properties to avoid creating excessive noise or intrusions on privacy, particularly when development is adjacent to sensitive uses such as residential development.
- On larger sites with multiple buildings, design parking areas and open spaces so they can be shared by several buildings.

See Also
Chapter 9: Parking

3.3 Site Access

Vehicle access should not dominate a site, even where vehicle access must be accommodated for parking or loading areas. Pedestrian and bicycle access should be given equal consideration.

3.3.1 Building Entrances

Entrances to buildings are the transition area between the public and private realms; they are highly active places. When entrances to retail businesses are placed where they are visible and inviting to people on foot, they add to the visual interest of the public realm.

- Orient the main entrances to a building toward a public street, and include architectural features that give them prominence.
- Locate transit stops, pedestrian seating, bicycle parking and similar amenities near building entrances.
- Orient the entrances of residential buildings toward the street.
- Provide multiple entrances into large buildings, such as those that occupy most of a city block or have frontages longer than 150 feet.

See Also
"Links to Transit"
on page 41

These closely spaced building entrances in La Mesa are inviting to pedestrians.

3.3.2 Vehicle Access

While it is often important to allow vehicles to access a site, each access point should be designed to minimize conflicts with pedestrians and bicyclists.

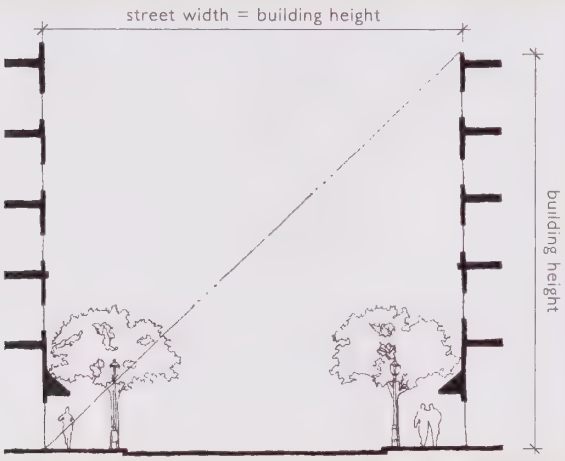
- Limit access points to the minimum number that is necessary to serve the property.
- Minimize the width of all driveways. If a driveway must accommodate large vehicles, such as delivery trucks, use the minimum width that can accommodate the effective turning radius of these vehicles.
- Place all driveways at right angles to the street. Do not include a curb return at the corner of the driveway unless the driveway is signalized.
- Where possible, provide access to service vehicles through an alley, or through a common access point that is shared with other vehicles.
- Where a driveway crosses a sidewalk, clearly demarcate the sidewalk across the entire width of the driveway.
- Indicate major entrances with special design treatments, such as entry signage or distinctive landscaping.

See Also
Chapter 9: Parking

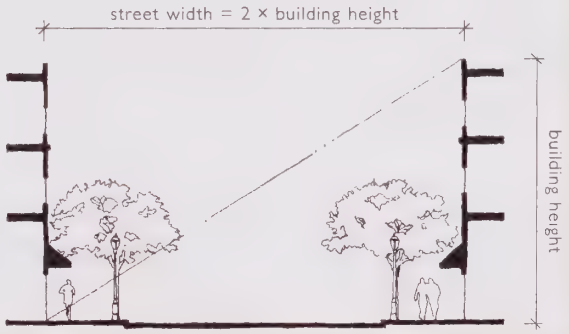
Change in Development Intensity

Many established communities were originally developed with small, low-rise buildings, at a time when land values reflected their automobile-oriented nature. However, the introduction or expansion of transit in a community represents a significant investment. To ensure that this investment is productive, new development within walking distance of a transit stop must occur at a high enough intensity to provide increased ridership for the transit operator. Communities often grapple with issues related to this increase in development intensity. Concerns about the increase may relate to the height of buildings; the floor-area ratio (FAR) or dwelling units per acre that are allowed; or a combination of these issues.

Over time, many of the properties near a transit stop are likely to redevelop at similar intensities. However, the first project that increases the development intensity on a block or street is likely to draw a great deal of attention, since it represents the most visible change. The following principles and illustrations show how this first project can be designed to win greater acceptance from the community.



A 1:1 ratio of building height to street width creates a well-defined "outdoor room."



A 1:2 ratio can also create an enjoyable space for pedestrians.

- **Street Wall Height.** One requirement for new development in Smart Growth Areas is to enhance the pedestrian environment and promote multiple modes of travel. Therefore, it is important to consider how taller new development shapes the public realm of the street and sidewalk. Research has shown that pedestrians benefit from a sense of enclosure by buildings, creating what is often referred to as an "outdoor room." As discussed in *Great Streets*, the well-known book by urban designer Allan Jacobs, comfortable and enjoyable street environments typically maintain a ratio of building height to street width—measured from building face to building face—that is between 1:1 and 1:2, as shown above. While this ratio is a good general rule, it may be more appropriate to limit heights further in some special locations—for example, next to open spaces or the coast—in order to create a transition between built and natural spaces.

- **Building Mass.** An important issue for new development introduced into established contexts is its scale. Older communities are often made up of one- and two-story buildings on parcels that are generally 25 to 50 feet wide. New buildings should exhibit massing characteristics that are in keeping with the smaller scale of older development. The diagrams on the opposite page provide some examples of how the building mass of new development can be sculpted to exhibit a contextual relationship with the existing condition.

- **Good Design.** In addition to appropriate street wall heights that reinforce the public realm and massing forms that relate to the existing context, design solutions can solve many issues that arise from increased development intensities. Design that emphasizes a pedestrian scale, quality construction and materials, and well-detailed public frontages will create a greater level of acceptance and satisfaction in established neighborhoods and communities.

Examples of Contextual Development in Existing Neighborhoods

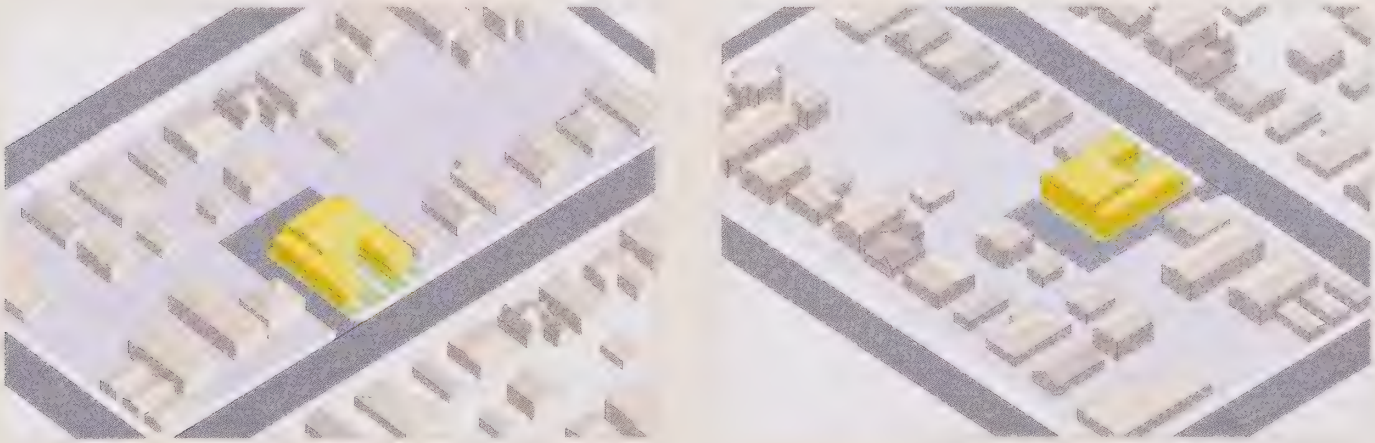
Mixed-Use Building on Corner Site

A large corner site provides an emphasis at the intersection of the streets, establishes a street wall and steps the height back on all sides. Podium parking and a small surface parking lot are accessed from an alley.

Mixed-Use Building on Mid-Block Site

A building on a mid-block parcel on a commercial corridor establishes a good street wall to frame the pedestrian realm. The building is set back from the side property lines to allow for windows, and it steps down to two and three stories at the sides and rear. Parking is provided in the building's podium.

Residential Building in Single-Family Neighborhood



By maintaining established neighborhood setbacks and proving a series of small-scaled building forms, an 8-unit residence can be appropriately sited on a street that is comprised primarily of single-family residences. A surface parking lot is provided behind the building.

The pedestrian entrance to a site in Oakland, California, is highlighted by a gateway.

3.3.3 Pedestrian and Bicycle Access

All sites must provide clear, safe points of access for pedestrians and bicyclists, not just vehicles.

- On larger sites containing multiple buildings, highlight the site's entrance with design features that create a clear pedestrian path.
- Provide a clear, safe path between bicycle parking areas and entrances from the street.

3.4 Connectivity

Good connectivity within a site allows people to easily move to and from the public realm. Site planning should increase connectivity by implementing design solutions that maximize access and optimize pedestrian use of new development.

Unobstructed pedestrian pathways and sidewalks, such as this one in Coronado, ensure that community members of all physical abilities can use and enjoy their surroundings.

3.4.1 Universal Access

New development should be designed for the use and enjoyment of all community members regardless of their physical ability. Universal access can be a challenge in places with significant topography, such as some of the communities in the San Diego region.

- Connect all commercial buildings to the public sidewalk via a publicly accessible path or walkway.
- Avoid excessive steps or level changes in primary circulation networks.
- Utilize materials with flat, smooth surfaces that do not create tripping hazards along pedestrian walkways to and from buildings and parking areas.

3.4.2 Pedestrian Connections

To connect to the street and public realm, new development should be designed with clear pedestrian connections to the sidewalk.

- Provide attractive, well-marked pedestrian links that create a clear path of travel between parking, buildings and sidewalks.
- Include elements such as special paving materials, landscaping, pedestrian-scaled lighting and seating along pedestrian paths and walkways to encourage pedestrian use.
- Use special design features to increase pedestrian safety where walkways cross traffic lanes. Potential design features include colored or patterned pavement, curb extensions to narrow travel lanes, and low-level lighting such as a bollard light.

See Also
"Pedestrian Sidewalk Zones"
on page 65

A pedestrian and bicycle overpass in San Diego creates a connection across a canyon.

Crime Prevention through Environmental Design

Crime Prevention through Environmental Design (CPTED) is the practice of designing sites, buildings and public spaces with the goal of reducing crime, alleviating the fear of crime and improving quality of life. CPTED is based upon the idea of defensible space, developed by the architect Oscar Newman. According to this concept, all space is defended by the people who use it. If a space is defended by legitimate users, it is protected against crime; if a space is defended by illegitimate users, it cannot be used for its intended purpose. The premise of CPTED is that crime and misbehavior can be controlled by designing a space to encourage legitimate use. Today, CPTED principles are employed by planners, designers and law enforcement officers to prevent crime.

Designers can consider the following guiding principles to incorporate CPTED into a site design:

- **Natural Surveillance.** Encourage legitimate activity and provide visual access to spaces, in order to increase the number of people using, watching and caring about the place.
- **Territory Reinforcement.** Ensure that the transitions between private and public space are visible, so that people have an appropriate perception of how spaces are meant to be used.
- **Access Control.** Clearly communicate where people are allowed and not allowed to prevent illegitimate use of a space.
- **Maintenance.** Ensure that development is designed in a way that reduces maintenance needs after construction. Poorly maintained spaces send a signal that the community is willing to tolerate negative activities in these spaces.
- **Appropriate Use.** Utilize design rails and decorative ledges to discourage skateboard use of seating walls. Avoid blank walls that can provide a blank surface for graffiti.

- Provide shade and landscaping along walkways.
- Provide design cues along pedestrian connections to help demarcate the transition between public and private spaces. Design cues include a change in colors, materials, landscaping or the dimensions of the space.
- Provide illumination along walkways that lead to parking areas as well as in the parking areas themselves.

3.4.3 Links to Transit

Transit stops should be easy to identify and locate, comfortable and accessible. To provide the best experience and increase ridership, transit stops should be integrated into the public realm. This can be achieved through site design that incorporates the transit facility into public spaces that are adjacent to compatible uses, such as markets, cafés and other services that meet the needs of transit patrons.

- Place building and site entrances close to adjacent transit stops, and orient buildings to face the transit stop.
- For public spaces that incorporate transit stops, include multiple areas with direct visual and physical access to the transit line.

Building entrances near transit connections, as shown in this example from San Diego, facilitate movement between the public and private realms.

3.5 Energy Conservation and Landscaping

A parking lot in San Diego is shaded by solar panels that provide energy for buildings on the site.

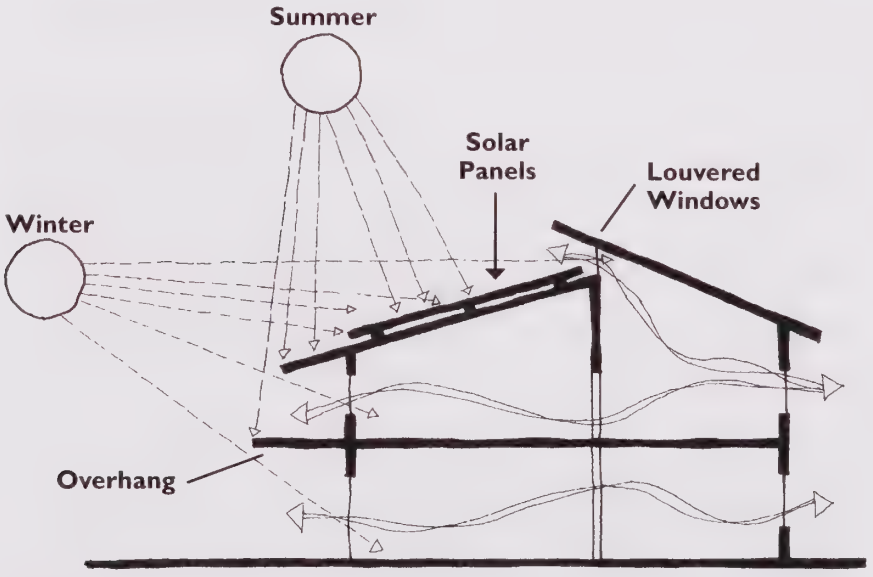
See Also
"Resource Conservation" on page 53

Landscaping is an integral part of a site's design. It has a significant effect on the appearance and comfort of the accompanying space. Incorporating sustainable design practices into the design of a site's landscaping can help to reduce the consumption of resources, create a more comfortable and livable environment and provide significant savings in maintenance costs. In addition, buildings can be placed within the site to take advantage of the region's climate.

3.5.1 Environmental Influences

Much of the San Diego region has a semi-arid Mediterranean climate, with ample sun and little rain. Well-planned sites can take advantage of this climate by orienting buildings so that they can be lit during the day by sunlight, rather than artificial light. Sites can also incorporate energy-generating technologies, such as solar panels and turbines that capture sea breezes and the seasonal Santa Ana winds. Shaded areas should also be available for the comfort of people sitting outdoors.

- Orient buildings to the sun to provide natural heating and daylighting and maximize energy efficiency.
- Take advantage of natural winds by placing buildings so that door and window openings are oriented to the prevailing wind direction.
- Plant shade trees where they can provide natural shading and cooling for buildings.
- Incorporate solar panels, other photovoltaic systems and wind turbines into sites and buildings where practical.



Orienting a building to the sun and prevailing winds can reduce heating and cooling costs by taking advantage of winds and natural light.

3.5.2 Landscape Design

A site's landscape design is an integral part of the overall site design and should be used to integrate development into its setting, rather than to camouflage it. The function of landscape materials should be considered before they are incorporated into a site design to ensure that the chosen materials create an aesthetically pleasing and comfortable environment.

- Use landscaping at the edges of paths, plazas and seating areas to help define the spatial organization of the site.
- Use a hierarchy of planting sizes and materials to mark the transition between the horizontal ground plane at the sidewalk or parking area and the vertical frontages of buildings.
- Use landscaping to activate building facades, soften building contours, highlight important architectural features, screen less attractive elements, add visual interest and provide shade.
- Maintain landscaped areas regularly to keep landscapes aesthetically pleasing, and to remove dead and dying plants that could create a fire hazard.
- Regularly thin the ground-level plantings below tree canopies to reduce the "fuel ladder" effect during wildfires.
- On slopes, provide space between tree canopies to limit the risk of fires that jump from tree to tree. The appropriate spacing ranges from 10 feet on shallow slopes to 30 feet on very steep slopes.
- Accent gateway or entry points with distinctive trees and plants.

Landscape design enhances public space and softens the edges of these apartments in San Diego.

3.5.3 Heat Island Effect

The foliage provided by trees and shrubs helps to reduce the heat island effect, a condition in which air and surface temperatures are higher in a localized area than in adjacent areas. This difference in temperature is due to a number of factors, including a reduction in the amount of shade, an increase in the amount of heat-absorbing surfaces and the accumulation of waste heat from cars and energy consumption. Appropriate landscape coverage can reduce the heat island effect. Plants also contribute to cooling the air through the evaporation of water from their leaves, resulting in a more comfortable pedestrian environment and decreased energy consumption.

- Plant trees and vegetation that will provide significant amounts of shade in areas with large heat-absorbing surfaces, such as parking lots.
- Use trees and shade structures, such as trellises, to shade plazas, sidewalks, parking areas and buildings in order to reduce heat gain and create a more pleasant pedestrian environment.
- Choose trees with a broad, leafy canopy to provide adequate shade for sidewalks and buildings.
- In paved areas, use materials with high solar reflectance, such as light-colored concrete, that reflect solar energy rather than absorbing and re-radiating it.

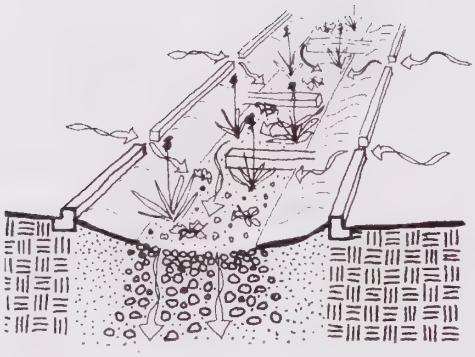
A new development in La Jolla's Bird Rock neighborhood reduces the heat island effect by incorporating new trees and landscaping, utilizing shade structures and incorporating solar-reflective materials.

Landscaping in the San Diego region should use plants that are adapted to the area's limited annual rainfall.

3.5.4 Climate-Appropriate Plant Materials

The San Diego region has an exceptional climate with little rainfall. Because water is precious in the region, landscaping should make ample use of native plants and other plants with low water requirements. It is also important to choose plants that help to reduce fire hazards, especially in parts of the region that are prone to wildfires.

- Choose plants that are suitable for the climate of the San Diego region. Use native or other climatically appropriate and drought-resistant plants.
- Within 30 feet of buildings, maintain an irrigated zone of low-growing, fire-resistant plants.
- Avoid plants that are highly combustible or create large amounts of fuel for fires.
- When choosing street trees and other shade trees, consider the functional and aesthetic benefits of shade trees as well as the need to conserve water. Choose species that can thrive with moderate irrigation once they are established.
- Minimize the amount of turf in landscaping, or consider turf alternatives. Turf lawns use significant amounts of water and have high maintenance demands that contribute to air pollution and greenhouse gas production.
- Design irrigation systems to provide different zones of irrigation, or "hydrozones," based on the water requirements of different types of plants.
- Limit the use of overhead irrigation spraying. Use drip irrigation specifically directed to where water is needed.
- Include irrigation controls that regulate the use of irrigation in response to rainfall.
- Irrigate plants at night or early in the morning to minimize water loss due to evaporation.
- Provide 2 to 3 inches of mulch on plant beds to help them retain moisture.
- To control disease, invasive plants and pests, use integrated pest management techniques such as introducing natural predators, planting species that will attract beneficial insects and installing mechanical trapping devices for pests.



Vegetated swales can be used to detain and infiltrate stormwater runoff.

3.5.5 Green Stormwater Solutions

Incorporating methods to reduce stormwater runoff and including design interventions to capture, clean and recycle stormwater runoff creates multiple benefits, including reducing impacts on stormwater infrastructure and recharging groundwater.

- Incorporate design features such as cisterns to capture, store and reuse stormwater.
- Use permeable paving materials for streets, sidewalks, parking lots and driveways.

- Minimize the amount of paved areas dedicated to parking; where those facilities are necessary, include "green" stormwater collection and treatment measures.
- Incorporate stormwater retention features that minimize runoff into streets, parking lots, landscaped areas and open spaces. Stormwater retention features include drainage swales and retention basins.
- Divert stormwater from roofs to vegetated swales or retention areas rather than storm drains.

3.5.6 Urban Forest

The urban forest includes all of the trees and vegetation growing within an urbanized area. The urban forest decreases energy usage by providing shade. Social benefits include the creation of aesthetically pleasing and comfortable environments, which contribute to the character of a community and increase property values. Environmental benefits include battling climate change by sequestering carbon dioxide, a major greenhouse gas, and creating valuable habitat for animals within urban environments.

Urban trees provide shade for pedestrians.

- Require street tree planting and maintenance as a condition of all development and renovation projects, including tree planting, staking and irrigation.
- Preserve and incorporate significant existing landscape elements into new development and landscape plans.
- Where an immediate impact is desired, use larger, more mature plant materials.
- Design landscaped areas to reconnect fragmented vegetation and help establish networks to surrounding natural areas.
- Preserve ecologically significant or sensitive vegetation and wildlife habitat.
- Incorporate multiple trees throughout surface parking lots.

3.6 Fences and Walls

The use of fences and walls must balance the need for privacy and security with the need to maintain visibility and contribute positively to the character of the community.

Fences and walls, such as this one in Burbank, California, can be designed to integrate with the site in an appealing way.

- In order to coordinate the overall site design, integrate new fences and walls with the existing through the use of similar materials, span dimensions, heights and construction techniques.
- Do not use screening fences and walls between buildings and the street.
- Design screening fences adjacent to residential properties so that they maintain a character and scale appropriate to the residential neighborhood.
- Ensure that fences around plazas and outdoor spaces are semi-transparent and architecturally compatible with the building.
- In fire hazard areas, limit the use of wood and other flammable materials in fences.

3.7 Parking

See Also
Chapter 9: Parking

A pedestrian path through a parking lot in San Diego provides a connection to the building.

Parking needs should be met with creative designs that prioritize the pedestrian and are incorporated into sites without dominating the public realm.

- Avoid facing a public street with surface parking areas. If unavoidable, they should be buffered by landscaping or low walls and fencing to create an edge to the sidewalk.
- Do not constrain pedestrian circulation between the parking area and other neighborhood amenities that can be reached on foot. For example, avoid placing fences where they would limit pedestrian circulation.
- Divide all surface parking areas into smaller units to decrease visual impacts associated with large expanses of pavement and vehicles. This can be achieved through the use of landscaped walkways, tree rows or other landscape solutions.
- Incorporate fully accessible pedestrian circulation paths within parking areas and between adjoining residential, retail and office developments.
- Provide landscaping in all parking areas for shade and aesthetic enhancement.
- In order to reduce the visual impact of large parking areas, provide landscaping to buffer views of those areas from public streets.
- Place "wheel stops" adjacent to tree wells and planter areas, so that parked cars cannot extend into landscaped areas.
- Facilitate drainage of parking areas into swales with the use of flush curbs, perforated curbs and tree offsets.
- Delineate the transition between a swale area and its surrounding landscape with plant material in and adjacent to the swale.

CHAPTER 4
BUILDING DESIGN

Quality building design ensures that individual development projects contribute to the overall character of a community, particularly the public realm. Buildings need to be designed to facilitate pedestrian activity and access to transit facilities. Buildings should also include architectural features that reflect the local vernacular and are appropriate to the local climate. This chapter provides guidance for building design that responds to the local context and encourages further high-quality development.

4.1 Building Frontage

A building's frontage shapes the public realm. A well-designed and thoughtfully proportioned building frontage that uses appropriate architectural detail provides visual interest and contributes to a community's character.

4.1.1 Building Rhythm

The rhythm of building façades along a street front can create great visual interest and activate the pedestrian realm.

- Establish a rhythm on building façades that is small-scale, with individual building bay widths of 25 to 50 feet.
- Design each building with varying wall planes, heights or contrasting materials to break up visual mass and avoid large, featureless structures.
- In residential buildings, use changes in massing and detailing to provide identifying features for individual units, where appropriate. Features that may be appropriate include bay windows and recessed elements.
- Use contrasting colors, a family of window sizes and architectural ornamentation to establish a rhythm to a façade and street frontage.

A residential development in San Diego uses varying wall planes and bay windows to create a rhythm on the building's façade.

4.1.2 Multiple-Tenant Spaces

Where multiple-tenant spaces are incorporated into a building, individual tenant spaces should characterize a building's bays, or structural elements.

- Use columns, piers or pilasters to differentiate the façade's horizontal elements.
- Incorporate vertical slots or recesses between horizontal façade elements.
- Vary the building façade by recessing the storefront entrance or creating a niche for the interior use to expand onto the sidewalk.

4.1.3 Mass and Proportion

The mass of larger buildings should be broken into proportional components that more readily relate to the human scale.

- Subdivide horizontal mass into portions or segments compatible with the scale of adjacent buildings.
- Employ vertical architectural elements such as columns, piers or pilasters to subdivide buildings into smaller increments at the ground floor and upper stories.

Vertical architectural elements subdivide the mass of a building into smaller increments.

Dividing the horizontal elements of this building in Coronado helps it relate to its surroundings and the human scale.

4.1.4 Building Façades

A building's façade, and the level of detail to which it is designed, plays a significant role in shaping the public realm and encouraging pedestrians to use the sidewalk.

- Design the façade to have a distinct base, middle and top.
- Design building façades to include details that add visual interest, distinctiveness and human scale.
- Establish depth and shadow by incorporating features that project from the building face, such as window bays and pilasters.
- Provide building reveals, or offsets in the wall plane, such as entryways and recessed windows.
- Design façade details that are integral to the architectural and structural design of the building and not tacked onto the surface.

Building details such as recessed windows and entries can add depth and solidity to a building's façade.

4.1.5 Entries and Ground Floor Activities

Buildings should be designed so that all of their entries are easy to find. This is particularly important for mixed-use buildings, which generally should include ground floor uses that encourage pedestrian activity.

- Accentuate all entries with features such as moldings, lighting, overhangs or awnings.
- Accentuate primary building entries with strong architectural definition such as recessed entry bays, in order to create transitional spaces between the building and street.
- Locate residential entries on the front façade of buildings and provide direct access to the sidewalk or street.
- Locate public and publicly-oriented uses on the ground floor of buildings to encourage pedestrian activity.
- Where adequate sidewalk space exists, design doors or sliding windows that enable ground floor restaurants and retail to expand onto the sidewalk.
- In buildings with a vertical mix of uses, reserve the ground floor for activity-generating retail storefronts. Locate residential uses on upper floors.

See Also
"Pedestrian Sidewalk Zones" on page 65

Architectural details highlight a building's primary entrance in La Mesa.

4.1.6 Windows

Windows can enliven the pedestrian environment and provide opportunities for ground floor businesses to be seen by passersby.

- In buildings containing retail, commercial, community-serving or other active uses, position windows for visibility by both pedestrians and motorists at street level.
- Include façade openings and windows that are vertically proportioned, with a greater height than width. Appropriate height-width ratios typically range from 1.5:1 to 2:1.
- Maintain a minimum of 60 percent of the ground floor linear dimension as evenly distributed display windows.
- Use clear glass in ground floor windows and doors of all commercial businesses to promote visibility into the ground floor space.
- For ground floor retail windows, utilize a larger window proportion than for upper floor windows.
- Enhance upper story windows with architectural details such as sills, molded surrounds and lintels.
- Where possible, employ operable windows to take advantage of breezes and reduce energy costs.
- In fire hazard areas, use smaller windows on any side of a building that faces an area with high fire risk.

Ground floor retail windows in Coronado activate the pedestrian realm.

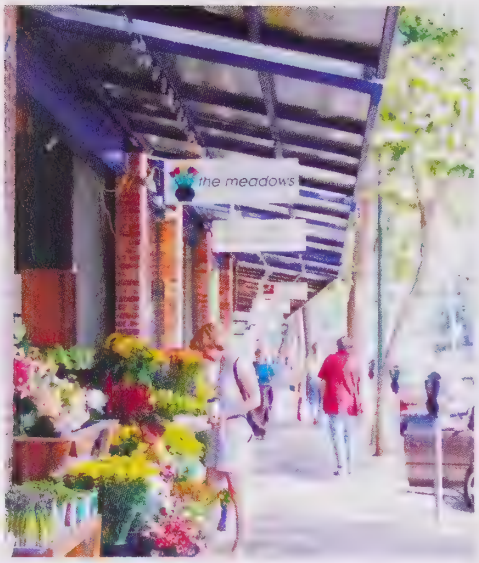
Residential Building Types in Smart Growth Areas

Table 4-1 shows the types of residential buildings that are typically most appropriate in Smart Growth Areas. Building types should be chosen based on the anticipated housing needs of a community, as well as SANDAG's density targets for each Smart Growth Place Type.

Table 4-1 **Residential Building Types**

Building Type	Typical Net Density	Typical Square Footage	Typical Bedrooms	Typical Height and Construction Type	Typical Parking
 Small-Lot Single Family Home	8 to 20 du/ac	800 to 1,200	1 to 2	2 to 3 stories, wood frame	Attached or detached garage and/or driveway
 Townhouse*	15 to 40 du/ac	800 to 1,600	1 to 3	2 to 4 stories, wood frame	Tuck-under garage
 Low-Rise Apartments / Condominiums**	20 to 75 du/ac	800 to 1,600	1 to 3	2 to 4 stories, wood frame	Tuck-under garage and/or surface lot; potential for structured parking
 Mid-Rise Apartments / Condominiums**	50 to 125 du/ac	800 to 1,600	1 to 3	3 to 5 stories, concrete podium with wood frame	Structured parking
 High-Rise Apartments / Condominiums**	100+ du/ac	800 to 1,600	1 to 3	7+ stories, steel and/or concrete frame	Structured parking

* Townhouses can be combined with apartments and condominiums, either on the ground floor or on upper stories.
** These building types also support mixed-use development with commercial uses on the ground floor.
Adapted from Metropolitan Transportation Commission, 2007, *Station Area Planning Manual.*



Awnings can complement the character of buildings while providing functional benefits, as shown in this example from Oakland, California.

4.1.7 Awnings, Canopies and Arcades

Awnings, canopies and arcades provide shade and cover from the elements and help to reinforce the pedestrian scale.

- Design awnings, canopies and arcades to be consistent with the character of the building.
- Design arcades to provide at least ten feet of clear space between the building façade and the edge of the arcade, so that there is adequate space to walk along the arcade as people enter and exit buildings.
- Design awnings and canopies to provide a minimum clearance of eight feet between the sidewalk and the bottom of the canopy or awning valence.

Changes in color help to distinguish different parts of this building in San Diego.

4.1.8 Building Color and Materials

Visually appealing buildings typically incorporate a limited number of complementary colors and materials.

- Where one building material is used to simulate another, use it in a way that is in keeping with the character and properties of the material being simulated.
- Where the building includes accent materials such as metal and wood, incorporate these materials on all façades of the building, not just the front façade.
- Limit the colors and materials used on the exterior of a building to an appropriate and varied palette.
- Allow building exteriors to use innovative new materials, or to use traditional materials in unconventional ways, as long as these innovative treatments fit the desired character for the neighborhood.
- In fire hazard areas, use fire-resistant materials such as stucco, stone or tile on the exterior of buildings.
- Use changes in color as well as materials to differentiate between different components of a building.
- Consider applying different colors and materials on the upper floors of taller buildings, to help differentiate between the building's base, body and top.

The materials and colors of this building in Coronado reflect local architectural character.

4.1.9 Universal Access

Buildings and their entrances must provide access for individuals of all levels of mobility.

- Design the main entrance of a building so that it is accessible to all people, regardless of their level of mobility.
- Where a person must change direction as they approach a building's entrance, provide at least 60 inches of clear space for turning.
- Provide a pedestrian path width of at least 36 inches leading to the building's entrance.
- Incorporate levers, U-shaped handles or door pulls, or magnetic push-release hardware on doors, so that they can be opened without grasping or twisting movements.

In this example from Berkeley, California, a ramp with a gentle slope provides a transition from the sidewalk to shops located above it.

4.2 Resource Conservation

Design solutions should incorporate strategies to conserve resources during both construction and operation of the building.

4.2.1 Water Conservation

There are numerous systems for conserving water that can be incorporated into the design of new and newly-renovated buildings.

- Employ rooftop catchment systems to collect rainwater for reuse as a supplemental landscape water supply.
- Establish "greywater" plumbing systems in new buildings where practical, in coordination with local health standards. Greywater is previously used water from washing machines, dishwashers and other on-site uses that can be collected and reused for limited purposes, such as watering plants and flushing toilets.
- Install low-water-use fixtures and appliances in all new and renovated buildings.

See Also
"Energy Conservation and Landscaping" on page 42

See Also
"Energy Conservation and Landscaping" on page 42

A projecting feature on this building in Emeryville, California, provides shade for a window.

4.2.2 Energy Conservation

Sustainable building design features can help buildings to conserve energy. This is particularly true in the San Diego region, where there is very little rain and ample exposure to sunlight throughout most of the year. Energy conservation techniques can be tailored to the climate of the San Diego region to minimize the energy needed for heating, cooling and ventilation.

- Maximize the number and size of north-facing and south-facing windows. Use smaller and fewer windows on the east and west sides of the building.
- Minimize direct sunlight by incorporating strategically placed overhangs, louvers or similar shade-producing features.
- Provide fully operable windows that can be adjusted throughout the day for maximum ventilation.
- Design building interiors to take advantage of natural ventilation by orienting rooms so that breezes can blow through them.
- Properly insulate and seal all new and renovated buildings to contain and extend the climatic influence of heated or cooled air.
- Use energy-efficient heating, ventilation and cooling systems that regulate the interior temperature of buildings throughout the day.

4.2.3 Materials Conservation

Cost-efficient and sustainable construction materials and practices should be utilized in all development.

Green Building Certification

The United States Green Building Council (USGBC) initiated its Leadership in Energy and Environmental Design (LEED) Green Building Rating System in 1998. The system encourages sustainable building practices through a universal certification process, in which buildings are scored for their on-site sustainability, water efficiency, energy conservation, materials, indoor environmental quality and design innovation. LEED-certified developments have positive environmental, financial and political benefits for the communities that support them.

LEED-certified development can have both financial and environmental benefits.

Another popular certification system for green buildings is Build it Green's GreenPoint Rated, which provides guidelines for single-family and multi-family residential construction. Many cities have also chosen to develop their own system for rating green buildings, which requires more work by the local jurisdiction but makes it possible to tailor the system to local conditions.

- Where feasible, reduce waste and minimize use of new resources by renovating or adding to existing buildings rather than building new structures.
- Use "rapidly renewable" materials such as bamboo, engineered lumber and paper-based cellulose where appropriate.
- Use high-quality materials to reduce maintenance and replacement costs.
- Use recycled construction materials, such as cellulose insulation, recycled carpet and recycled glass, for at least 5 percent of the project's materials.
- Use locally manufactured building products to reduce transportation impacts and costs and support local industry.
- Sort demolition debris and construction waste on site, for delivery to recycling centers, in order to ensure that materials are being recycled. Divert at least 50 percent of these materials to recycling centers.

Recycled construction materials, shown here in an example from San Francisco, California, can be attractive, affordable and environmentally friendly.

4.2.4 Adaptive Reuse

Adaptive reuse is the practice of reusing existing buildings for new uses while preserving some or all of the building's structural elements or architectural features. Adaptive reuse helps to conserve natural resources by reducing the need to use new materials for construction. In addition, adaptive reuse of historic structures can preserve history and reinforce neighborhood character and identity.

See Also
Chapter 9: Parking

- Reuse buildings that can accommodate a modern development program and help to achieve a long-term vision for the neighborhood.
- Determine the best possible new uses for existing buildings with respect to their contribution to neighborhood character, economic feasibility, economic revitalization and interior conversion potential.
- When adaptively reusing historically significant buildings, preserve the defining historic features of buildings wherever possible.
- Ensure that parking standards provide flexibility for adaptive reuse, using measures such as counting on-street parking spaces towards minimum parking requirements, providing shared public parking areas, and allowing developers to pay in-lieu fees for parking.

This building in San Diego is a successful example of adaptive reuse.

LEED for Neighborhood Development (LEED-ND)

The United States Green Building Council (USGBC), with support from the Congress for the New Urbanism (CNU) and Natural Resources Defense Council (NRDC), has developed a rating system for green neighborhood design. Building on the Leadership in Energy and Environmental Design (LEED) rating systems that already exist for individual buildings, LEED-ND emphasizes principles that tie buildings, public infrastructure and open spaces together into neighborhoods. It is designed to be applied to new neighborhoods that have a variety of different scales.

LEED-ND rates new neighborhoods based on their location and relationship to existing development, infrastructure and natural features; their overall design and land use mix; and their ability to support a variety of transportation and housing options. Additionally, a neighborhood will receive a higher rating if its buildings reflect green building and site design principles.

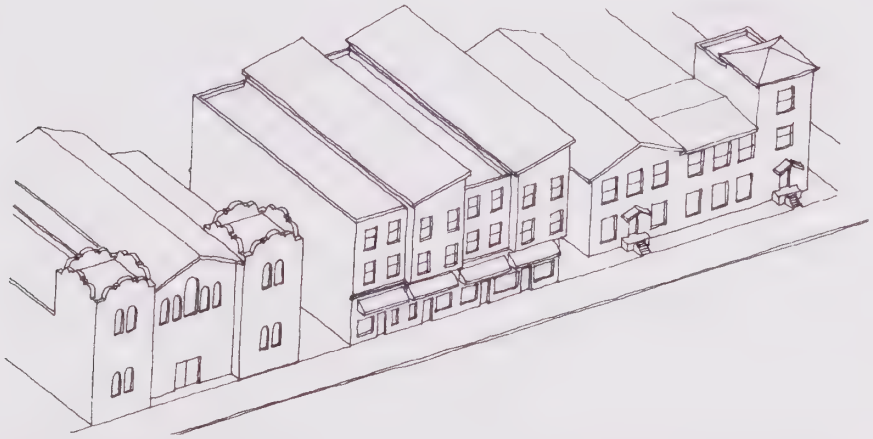
4.3 Roof Design

Well-designed buildings address the form, color and texture of the roof as an integral part of the overall building design.

4.3.1 Form

The shape of the roof should fit with the overall architecture of the building.

- Design the roof's shape to reflect the configuration of the building's mass and volume.
- In fire hazard areas, limit the size of eaves and overhangs.
- Use roof forms that have a consistent character from all vantage points.



Roof forms along a street can reflect various styles and eras of development.

Visible rafter tails provide details that strengthen the roofline of this building in Coronado.

4.3.2 Detailing

An attractively detailed roof can enhance and strengthen the overall character of the building.

- If appropriate to the building's architectural style, strengthen the roofline with cornice or parapet detailing on flat roofs, or detailing around the eaves on sloped roofs.
- Avoid false fronts and flat, thinly applied mansard forms.
- Screen all roof-mounted mechanical and electrical equipment, as well as communication equipment such as satellite dishes and cell phone towers, from public view. Design the screening to be architecturally consistent with the building.

4.3.3 Materials

A building's roofing materials should be carefully chosen, particularly if the roof is visible from public rights-of-way.

- Use roofing materials that are appropriate to the architectural style of the building.
- In fire hazard areas, use fire-resistant roofing materials such as clay tiles, fiberglass shingles or cement shingles.
- Avoid highly reflective roofing materials on visible roof surfaces.

Green Roofs

Green roofs are an extremely effective stormwater management tool that can also provide multiple environmental benefits, including carbon sequestration; reduction in pollutants and stormwater surges from roof runoff; energy conservation; heat island reduction; and creation of wildlife habitat. While green roofs have higher installation costs than a standard roof, they also have lower lifecycle costs. When their long-term benefits are considered, including increased lifespan of the roof, greater insulating properties and reduced heating and cooling costs, the cost savings from a green roof can be considerable.

This green roof on the California Academy of Sciences building in San Francisco includes native plants that are well adapted to long, dry summers.

For example, the American Society of Landscape Architects (ASLA) installed a green roof on their Washington, D.C., headquarters in 2006. From July 2006 to May 2007, the green roof captured nearly 75 percent (27,500 gallons) of all precipitation on the roof. Roof runoff occurred only during rainfalls that exceeded one inch, and during repeated heavy rains. The runoff was also much cleaner and contained fewer pollutants than typical rooftop runoff. The green roof also lowered the ambient air temperature by as much as 32 degrees Fahrenheit in the summer when compared to a neighboring tarred roof, which helped to mitigate the urban heat island effect and reduced the energy demand for cooling.

San Francisco's California Academy of Sciences also incorporates a green roof on its new building in Golden Gate Park. The roof uses native plants that were selected to provide habitat for native birds, butterflies and beneficial insects. Its undulating form is overlaid with porous trays made from coconut husks, which were installed on the roof as individual tiles.

In dry climates, such as those in the San Diego region, it is essential for a green roof to use plants that can thrive with limited water and that do not create a fire hazard during dry periods. Sedum and succulents are often appropriate choices. While some irrigation will be required, it can be designed with low-volume emitters or subsurface systems that conserve water. A landscape architect can help to select plant species that are climatically appropriate and suited to the building's local climate, planting depth and exposure to the elements.

After a green roof has been installed and its plants are established, maintenance requirements are usually minimal. Typical maintenance of a green roof includes trimming and weeding of plants; monitoring the irrigation system; and inspecting the roof to check for blocked drainage channels and leaks in the waterproof membrane. Because green roofs protect the roof membrane from direct sunlight, they can prolong the life of the roof membrane compared to a standard roof. If gaining access to the membrane for maintenance is a concern, the green roof can be designed to use modular plastic trays that can be temporarily removed for maintenance.

4.4 Signage

The primary purpose of signage is to identify the occupant or occupants of a particular building. A building's signage should be designed accordingly.

- Limit information on signs to occupants and addresses; do not use signs for the purpose of advertising.
- Avoid standardized or corporate signage that does not conform to the architectural detailing of the associated building.
- Incorporate building scale, design and materials selection and site aesthetic into the design of all signs.
- Develop a master sign program for multi-tenant buildings to minimize potential visual conflict, clutter and competition.
- Limit freestanding signage to a single sign for each development that contains the names and addresses of all occupants.
- Do not obscure architectural details such as recesses, structural bays or fenestration with wall-mounted signs.

A projecting sign in San Diego clearly identifies the business inside.

This canopy sign in San Jose, California, is integrated into the overall design of the canopy.

CHAPTER 5
MULTIMODAL STREETS

Streets are our largest urbanized public open spaces and provide the framework upon which cities are built. Historically, they have served many functions for many users, providing mobility as well as creating spaces in which people meet and interact. As automobiles became more abundant, however, the design of streets shifted to emphasize the movement of cars at high rates of speed. By enabling sprawling land use patterns, the automobile became a necessity as well as an American cultural symbol, and accommodation of pedestrians, bicyclists and transit users became secondary to high "levels of service" for the automobile.

In contrast, a street that provides for all modes of transportation—including pedestrians, bicyclists and transit vehicles as well as automobiles—is known as a complete street, because it serves the needs of everyone. Complete, multimodal streets are important in Smart Growth Areas because they accommodate the variety of transportation choices necessary to support more intensive development, while minimizing the amount of land required for automobile travel and storage. Their design emphasizes balance—the appropriate allocation of often-limited public rights-of-way to share between the multiple functions and users of the street. It also emphasizes sensitivity to the context in which streets exist, so that streets support the surrounding land uses and enhance the character of the community.

5.1 Street Networks and Connectivity

Street connectivity refers to the directness of links and the density of connections in the network. A well-connected network has many short links, numerous intersections and minimal cul-de-sacs. As connectivity increases, travel distances decrease and route options increase, creating a more accessible and flexible system.

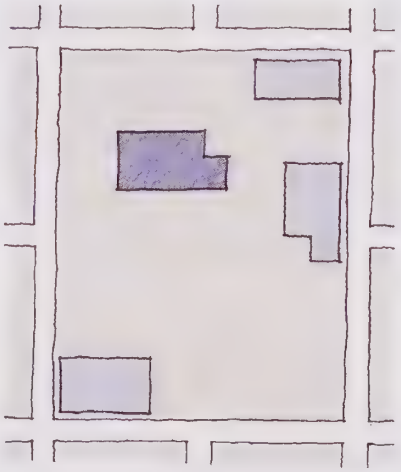
One way of measuring connectivity is to count the number of street intersections per square mile. Higher densities of intersections, particularly four-leg intersections, indicate a more highly connected street network. Street networks with low connectivity often have intersection densities below 100 per square mile. In contrast, a highly connected network typically has at least 200 intersections per square mile, and may have more than 300.

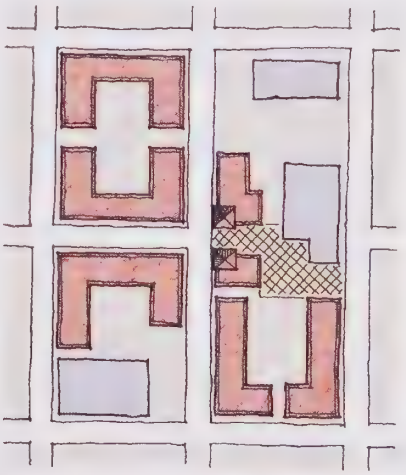
Dedicated bicycle paths increase connectivity in this San Diego neighborhood.

5.1.1 Redevelopment of Large Sites

As part of infill redevelopment of very large sites, such as former shopping malls or manufacturing businesses, developers should strive to create a highly-connected network of streets.

- Redevelop the street network to provide short street segments and walkable block sizes as much as possible. A 200- to 300-foot spacing of streets on average is optimal to support pedestrian activity; up to 400-foot spacing on average is acceptable.
- Extend surrounding streets through the project where appropriate.
- Space major thoroughfares no more than 1/4 mile from one another in dense urban areas, and 1/2 mile apart in other places, so that each thoroughfare requires fewer lanes.


In this example, plans to remove an existing building (shaded dark gray) create an opportunity to redevelop a superblock.


The redeveloped site extends surrounding streets through the site where possible and provides a pedestrian connection through the block where a street cannot be extended.

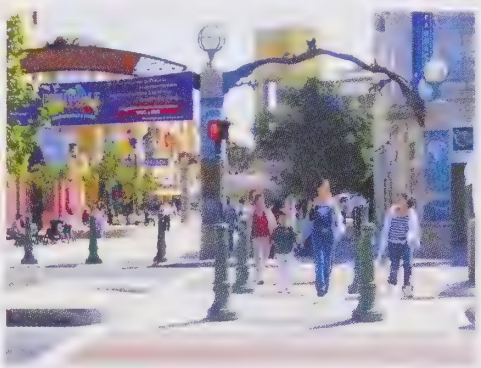
- Provide a dense network of local streets, with multiple connections to surrounding major thoroughfares.
- Where possible, use alleys rather than curb cuts to provide access to vehicle parking and loading spaces.
- At the edges of new development, include street stubs that allow connections to adjacent properties that may develop or redevelop in the future.
- Connect new streets to the surrounding street network. Where dead-end streets are necessary, provide pedestrian and bicycle connections to adjacent streets.
- Include a system of bicycle facilities, including on-street bike lanes, separated paths or shared lanes on traffic-calmed streets, with multiple parallel routes.
- Connect bicycle facilities to major destinations such as schools, retail districts and parks, as well as to existing bicycle facilities on adjacent streets.
- Provide pedestrian facilities on both sides of all streets, with connections to off-street paths where needed.
- Provide paseos and other pedestrian and bicycle connections where streets are not continuous.

5.1.2 Reconstruction of Existing Streets

Rebuilding an existing street creates an opportunity to redesign the street so it is more compatible with the existing context, or with the community's vision for its future. The visual simulations in Chapter 2 show examples of how existing streets in the San Diego region could be redesigned to accommodate all modes of travel.

- When redesigning a street, consider whether traffic lanes could be narrowed for traffic calming or to gain additional width for other uses. In general, narrowing lanes may be appropriate on streets that carry fewer than 20,000 vehicles per day under future design year conditions; where intersections are closely spaced to allow for vehicle queueing; and where speeds are low.
- When redesigning a street, consider whether traffic lanes could be removed to provide adequate space for pedestrian, bicycle and transit facilities, as well as medians, center turn lanes and on-street parking. In general, removing lanes may be appropriate on four-lane undivided streets that carry fewer than 20,000 vehicles per day under future design year conditions.
- When redesigning a thoroughfare, consider whether it could be realigned to improve connectivity and accessibility to surrounding properties.
- Conduct an appropriate environmental assessment when redesigning a street. This assessment should consider impacts to the roadway, but also any beneficial effects on pedestrian and bicycle mobility, as well as modal shifts from automobile traffic to transit service.

See Also
"Transformation of Existing Places" on page 20



This street in Oakland, California, connects to an off-street pedestrian path that leads to a transit station.

5.2 Complete Streets

Multimodal streets such as this one in La Jolla are accessible to all users.

A multimodal street in San Diego accommodates pedestrians, bicyclists, motorists and public transit riders.

Complete streets follow the key principles in this section and, as a result, can be safely shared by motorists, pedestrians, bicyclists and transit.

5.2.1 Balancing User Needs

A network of complete streets enables safe access for all users. Pedestrians, bicyclists, motorists and transit riders of all ages and abilities can safely move along and across a network of multimodal streets. This form of street design requires that the street be compatible with its context.

In 2008, the State of California enacted AB 1358, the Complete Streets Act, which requires cities and counties to incorporate provisions for multimodal streets into their General Plan Circulation Elements starting in 2011. This legislation creates many new opportunities to plan for multimodal streets in the years to come.

- Begin the street design process with a long-range vision for the community, district or street. The vision should provide for future and existing needs.
- Create a design that supports community values and economic development, as well as safe mobility and access for all users.
- Prioritize multimodal design elements, such as bicycle lanes, wide sidewalks and transit lanes, and implement the highest-priority elements if the right-of-way is constrained. This may involve reducing the number of automobile travel lanes.
- Ensure that all streets are accessible to people with disabilities, as well as others with limited mobility.
- Consider special users, especially the elderly and children, depending on the surrounding development context.

5.2.2 Design for Pedestrians

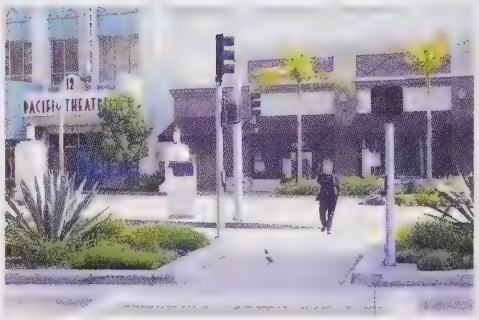
Pedestrians should be accommodated on all streets, even auto-oriented streets. The following guidelines explain how to design a street that meets the basic needs of pedestrians. SANDAG's *Planning and Designing for Pedestrians* provides additional details about how to create pedestrian-oriented streets.

- Provide continuous pedestrian connections within the public right-of-way, avoiding any gaps or diversions that require significant detours.
- Design all pedestrian routes to meet the requirements of the Americans with Disabilities Act (ADA).
- Provide a 6-foot to 12-foot buffer between pedestrians and moving traffic, using a combination of landscaping, street trees, on-street vehicle parking and striped bicycle lanes.

See Also

Planning and Designing for Pedestrians

- Include pedestrian amenities such as street trees that provide a canopy over the sidewalk, seats where people can rest and pedestrian-scaled lighting.
- Incorporate public plazas and public art in selected locations.
- Provide safe street crossings, preferably spaced no more than 300 to 500 feet apart. A signalized intersection with a pedestrian-activated signal is one example of a safe crossing. On some streets, it may also be safe to provide a well-marked unsignalized crossing, with or without a pedestrian refuge.
- Consider providing a mid-block crossing where crossing distances exceed 600 feet. If a signalized mid-block crossing is not warranted, use a multi-stage crossing, where pedestrians must only cross one direction of travel at a time and have a safe place to wait in the center of the street.
- Minimize driveways and curb cuts, which create conflicts with pedestrians and bicyclists. Consolidate driveways for adjacent uses where possible, and remove unused driveways.



Well-marked crosswalks and pedestrian refuges in Culver City, California, encourage walking by creating a safer pedestrian environment.

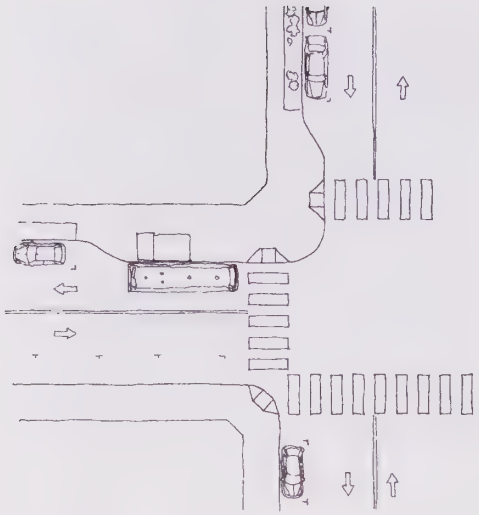
5.2.3 Design for Bicyclists

Bicyclists prefer different types of facilities depending on their level of skill and confidence. It is important to provide a variety of facilities and routes to accommodate the spectrum of bicyclist ages, skills and needs, and to ensure that bicyclists can travel wherever they need to go. In addition, it is essential to provide a comprehensive, continuous bicycle network to encourage bicycle mobility. SANDAG's *Regional Bicycle Plan* provides additional details about how best to design bicycle facilities.

- Provide an interconnected, continuous network of bicycle facilities, including striped bike lanes, shared lanes, marked bike routes, and off-street bike paths and trails, that allows bicyclists to safely travel to any destination that can be reached by vehicle.
- Provide bicycle connections to parks and other public open spaces, as well as civic buildings.
- Designate "bicycle boulevards" on low-volume neighborhood streets as alternatives to traveling on major thoroughfares.
- Provide alternative routes that can accommodate bicyclists of varying levels of experience.
- Provide marked bike lanes on designated bike routes with high traffic volumes and speeds of at least 35 miles per hour. Ensure that bike lanes are consistent with the requirements of California's *Highway Design Manual.*
- On lower-volume, lower-speed streets, especially where width is limited, consider providing unmarked bike routes within travel lanes that are 14 feet wide, or use shared lane markings on streets that have on-street parallel parking.
- On four-lane undivided streets with fewer than 20,000 vehicles per day, consider providing space for bicycle lanes by converting the street to three lanes, with center left-turn lanes.
- Use "back-in angled parking" on streets with angled parking to make bicyclists more visible to drivers.

A shared lane marking in San Francisco, California, denotes a travel lane shared by bicycles and cars.

Back-in angled parking in Solana Beach gives drivers a clear view of vehicle and bicycle traffic as they exit their parking space.



A bus bulbout allows buses to stop in the travel lane.

5.2.4 Local Bus and Bus Rapid Transit Stops

Along with convenience, travel time and cost of the transit service, the comfort, safety and attractiveness of transit stops affects mode choice. The design of stops is especially important for a Bus Rapid Transit (BRT) system, since BRT provides greater convenience for passengers as well as faster service.

- Include signs, seating, lighting, trash cans and ADA-compliant wheelchair lift areas at all bus stops. Provide bicycle parking where demand warrants.
- At high-volume bus stops, provide additional amenities such as illuminated bus shelters, system maps and schedules, wayfinding signage and bars that passengers can lean on while standing.
- Consider including public art at bus stops and using unique designs for bus shelters, benches and other street furniture.
- Provide bus bulbs that allow buses to stop in the travel lane, so they can more quickly re-enter the flow of traffic. Use the bus bulb to provide additional amenities for passengers such as benches, bus shelters and trash cans.
- At BRT stops, provide a branded, easy-to-identify stop logo and shelter design. Consider providing off-bus fare vending machines on routes with very high ridership, and on routes where it is essential to minimize the amount of time spent at each stop.
- Allow level boarding by providing low-floor buses in combination with 14-inch-high boarding platforms. A curb height of 9 to 10 inches can accommodate near-level boarding.
- Display real-time arrival information if available. The first priority should be to provide this information at BRT stops.

Bicycle Boulevards

A bicycle boulevard is a street that emphasizes bicycle travel and provides bicyclists an alternative to streets with heavy vehicle traffic. Streets that could be designated as bicycle boulevards include residential streets that are parallel to arterial streets, as well as other low-traffic streets with high demand for bicycle facilities. Bicycle boulevards are designed to slow traffic, promote the movement of bicycles, and increase safety and convenience for bicyclists. Characteristics of bicycle boulevards include:

- Shared vehicle/bike travel lanes
- Traffic calming measures that slow traffic and discourage vehicle through traffic
- Limited traffic control along the boulevard to reduce the need for bicyclists to stop
- Distinctive directional signage
- Pavement markings to inform all users that bicyclists share the road with vehicles
- Special traffic control at major streets to help bicyclists cross, such as bicycle loop detectors in the pavement at signalized intersections

Berkeley, California, has a network of bicycle boulevards, where bicyclists and cars share the road.

- Enhance bus stop security by preserving lines of sight between the bus stop and surrounding areas. Lines of sight can be preserved by using low-trimmed landscaping and by placing the stop away from sound walls or tall fences, which create places where people can be concealed.
- Keep benches and bus shelters in good condition at all times. Remove evidence of vandalism as quickly as possible.

5.2.5 Bus Rapid Transit and Light Rail Lanes

BRT and Light Rail Transit (LRT), including streetcars, require a different design than local bus service. LRT and streetcars can operate in mixed traffic or in dedicated travel lanes. Because LRT and streetcar vehicles are constrained to tracks and are larger than buses, they require larger turning radii, wider clearances and longer stopping distances. They also need to be separated from motor vehicle traffic when turning at intersections.

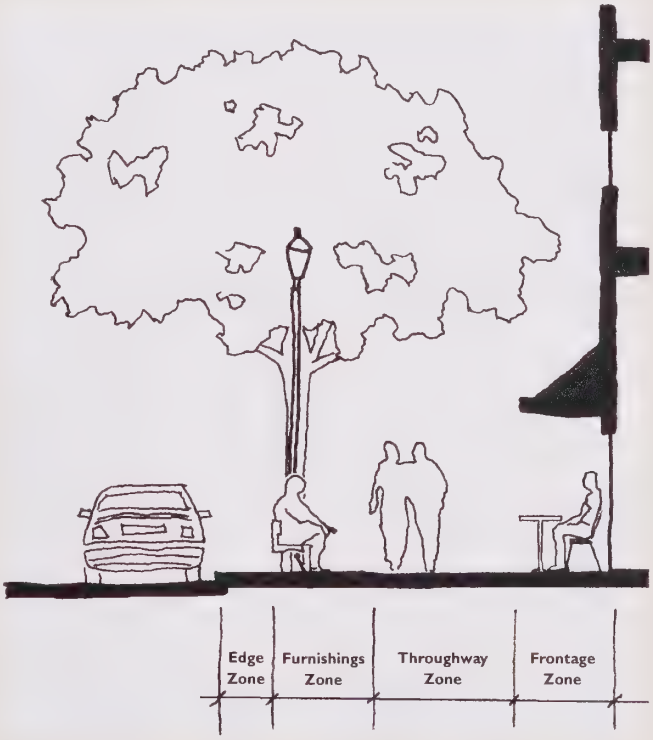
- Provide a minimum lane width of 11 feet for buses in mixed traffic or dedicated lanes, to accommodate the mirror-to-mirror width of modern buses.

LRT lanes can be physically separated from vehicle lanes to prevent conflicts, as shown in this example from Minneapolis, Minnesota.

Pedestrian Sidewalk Zones

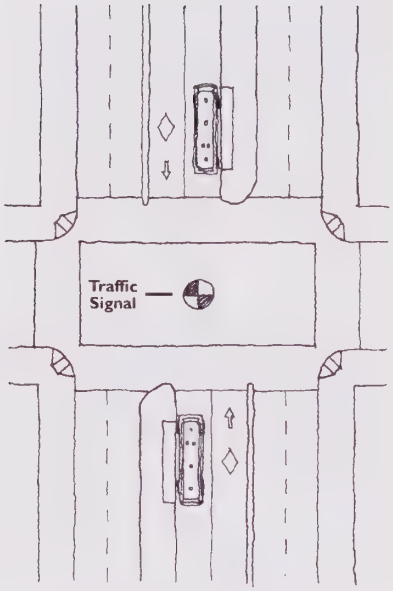
Sidewalks provide space for more than just the movement of pedestrians. They also accommodate outdoor seating and street furniture, and they connect the roadway to the sidewalk. A successful sidewalk design includes space for four distinct zones:

- **Edge Zone.** The interface between the roadway and the sidewalk. This zone provides space for car doors to swing open and for diagonally-parked cars to overhang the sidewalk.
- **Furnishings Zone.** The buffer between the walking area for pedestrians and vehicle traffic. This zone accommodates street trees, utility poles, fire hydrants, bicycle racks, parking meters, bus shelters, street furniture and similar items.
- **Throughway Zone.** The area where pedestrians travel. The preferred width for this zone is at least 6 to 8 feet. It must be entirely clear of obstacles and accessible to people with disabilities.
- **Frontage Zone.** The area adjacent to the property line. This zone provides space for pedestrians to enter and exit buildings, as well as to window-shop. It can also be occupied by outdoor displays, benches or planters.



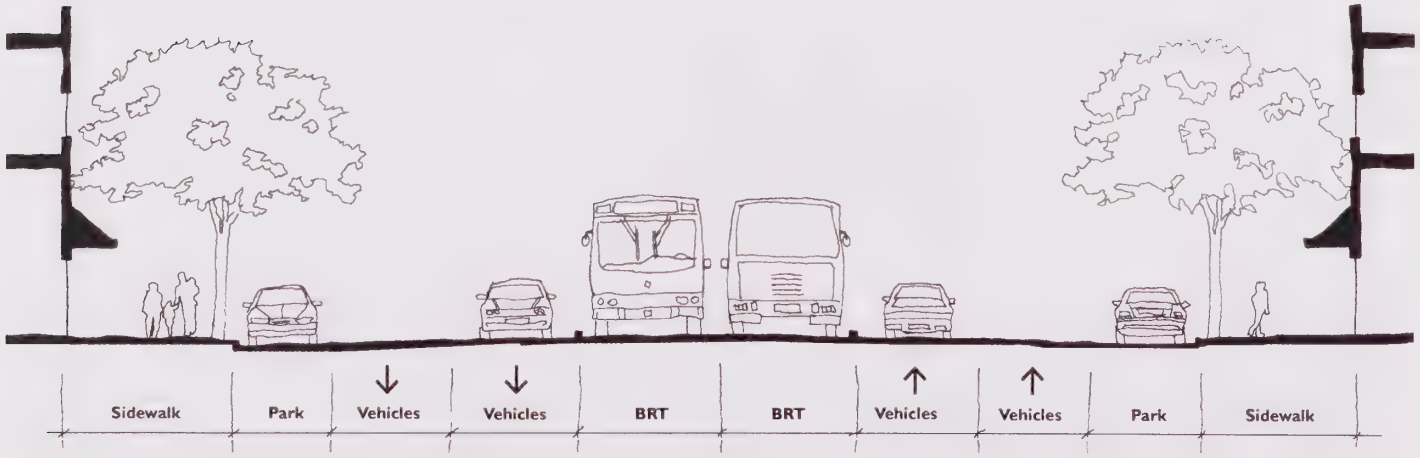
The pedestrian realm includes four distinct sidewalk zones.

SANDAG's *Planning and Designing for Pedestrians* provides more details about design solutions for each pedestrian sidewalk zone and for how the zones should be designed in different contexts.

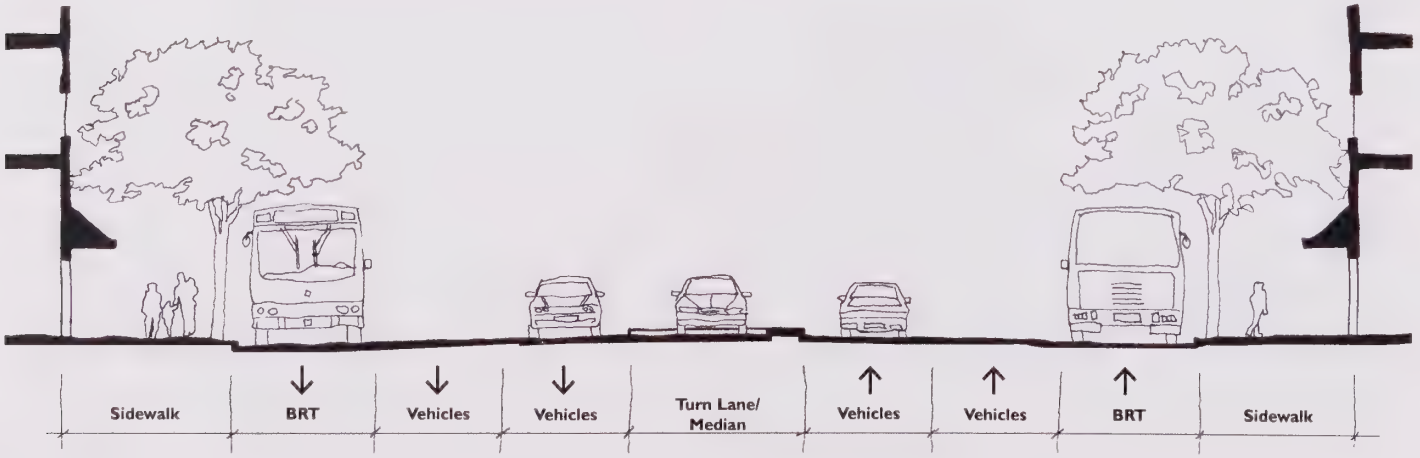


Stops for BRT and LRT vehicles can be provided in the median.

- Provide dedicated lanes on streets where at least two general traffic lanes can be maintained in each direction, where transit service runs most of the day, and where the travel time savings from dedicated lanes exceed 30 seconds per mile. General traffic lanes can be reduced to one lane in each direction if high-frequency transit service is provided, and if parallel streets provide an alternate route.
- On streets where BRT and LRT vehicles use the curb lane, consider removing on-street parking if it is determined that the parking will create operational problems for transit vehicles. If on-street parking cannot be removed, provide a 2-foot to 3-foot buffer between the curb lane and on-street parking to allow for the opening of doors on parked vehicles.
- On streets where BRT and LRT vehicles use the curb lane, allow bicyclists to share the curb lane with transit vehicles; provide bike lanes with a width of at least 5 to 7 feet; or provide bicycle facilities on a parallel route.
- On streets where BRT and LRT vehicles use median lanes, address potential issues with restricting vehicle crossings of the center lanes, as well as restricting left turns at intersections.
- On streets where BRT and LRT vehicles use median lanes, physically separate the lanes from other traffic lanes by providing raised curbs.



Median lanes provide the most efficient operation for BRT vehicles.



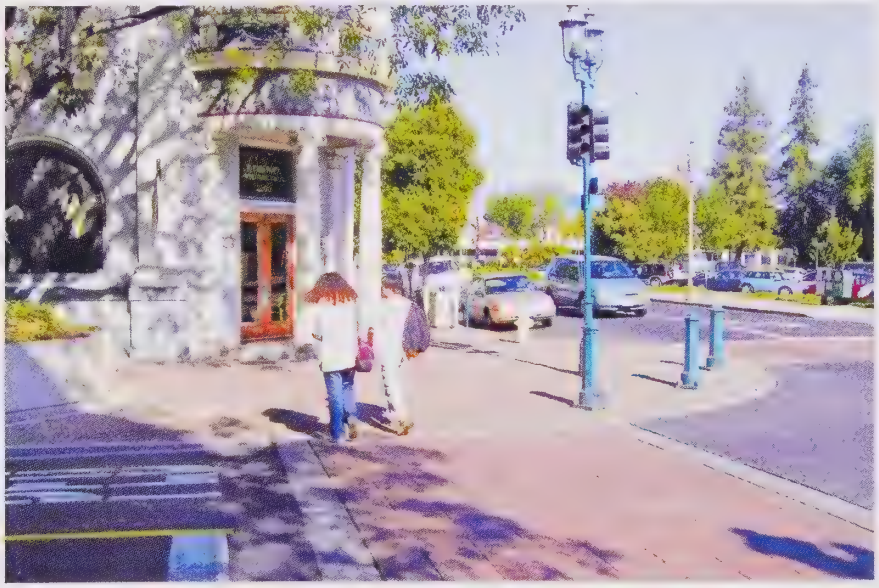
BRT vehicles can also operate effectively in curb lanes.

- At intersections with recurring backups, consider queue jump lanes for BRT vehicles, which provide a dedicated bus lane from the back of the recurring queue to the intersection. A queue jump lane can also be provided in a right-turn lane that is shared between through buses and right-turning traffic, but this requires special traffic signalization.

5.2.6 Multimodal Intersection Design

Intersections on a multimodal street must accommodate pedestrians, bicycles, cars, buses, trucks and, in some cases, trains. When street designers attempt to avoid conflicts between modes, they may inadvertently favor one mode at the expense of others. Appropriate designs manage these conflicts and integrate design features that safely accommodate all users. Table 5-1 provides a list of potential design features that help to achieve the following guidelines.

- Clearly indicate pedestrian crossings and bicycle facilities so that pedestrians and bicyclists understand how to use the street and drivers know where to focus their attention.
- Provide appropriate sight distances and lighting so that pedestrians can clearly view oncoming traffic and be seen by approaching motorists.
- At unsignalized intersections, limit pedestrian wait times to cross the street by creating gaps in traffic using signal timing at upstream intersections. This can be accomplished by modifying signal change intervals to create gaps of a few seconds—for example, through the addition of an all-red phase. Alternatively, provide two-stage crossings that include a generous pedestrian refuge in the median, so pedestrians can cross each direction of travel separately.
- At signalized intersections, limit pedestrian wait times by providing a shorter signal cycle length. Ensure that the pedestrian cycle is long enough for all pedestrians to cross the street, including people with limited mobility.



This intersection in Redwood City, California, includes highly visible crosswalks as well as bollards that protect pedestrians from turning vehicles.

Table 5-1 **Features of Multimodal Intersections**

Design Goal	Potential Features
Short and visible crosswalks	• Crosswalks on all approaches • Longitudinal ("Continental" or "piano key") crosswalk markings • Reduced overall street widths • Curb extensions with pedestrian push buttons on extensions • Median refuges on wide streets, with pedestrian-activated pushbuttons in the median • Pedestrian countdown signals • Signalized mid-block crossings on long blocks
Accessibility for all users	• Longer pedestrian clearance times (based on 3.5 ft/sec) • Audible signals • Two curb ramps per corner • ADA-compliant, pedestrian-activated pushbuttons • Clear pedestrian paths, clearances and access to crosswalks
Bicycle features	• Bike lanes continuous to stop line, with dashed line allowing vehicles to enter the bike lane for right turns • Bicycle-sensitive in-street detectors or video detection • Adequate length of green signal for bicyclists to cross signalized intersections
Reduced conflicts between pedestrians and turning vehicles	• Traffic signals that allow pedestrians to cross before allowing vehicles to enter the intersection • Traffic signals that allow pedestrians to cross in all directions (a "scramble phase") in high pedestrian volume locations • Traffic signals that include protected left turns for vehicles and prohibit pedestrians from crossing during the left-turn phase ("protected left turn signal phasing") • Adequate sized islands for pedestrian refuge
Design elements for high-priority transit routes	• Bus Rapid Transit signal priority • Queue jump lanes and associated signal phasing • Bus bulbs
Low vehicle speeds	• Target operating speeds of 25 to 35 mph • Signal progression timed for target speed • Small curb return radius • Roundabouts

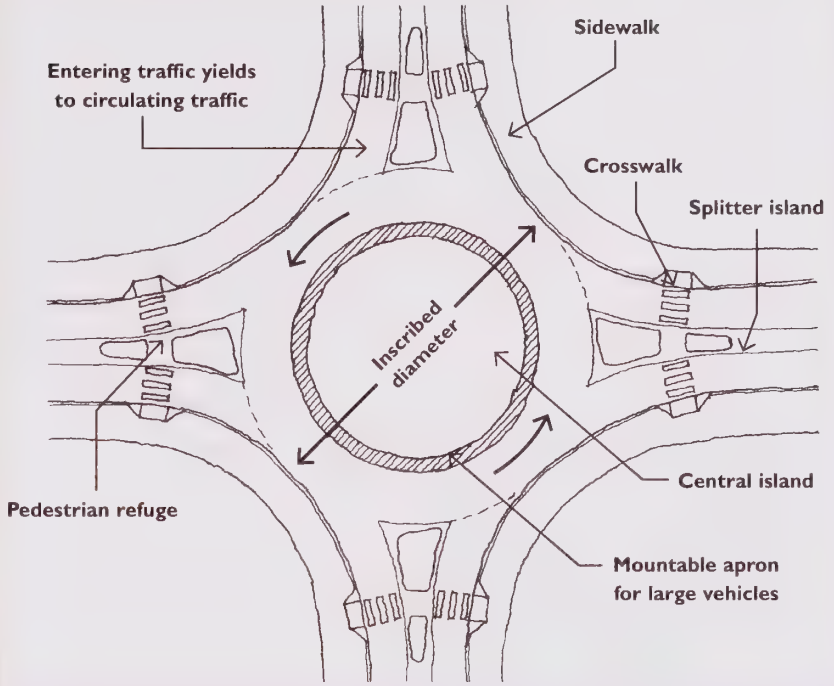
Roundabout Design

Modern roundabouts are circular intersections that guide traffic in a counter-clockwise direction around a central island, with a gentle turn that slows traffic to speeds of 15 to 20 miles per hour. Roundabouts reduce the frequency and severity of collisions by slowing vehicle traffic and moving all vehicles in the same direction. As a result, they are increasingly being used to control intersections on streets ranging from local residential streets to major arterials.

Roundabouts have several design attributes that distinguish them from "traffic circles," which are often stop- or signal-controlled:

- Vehicle entries in a roundabout are yield-controlled. Vehicles that are entering must yield to vehicles in the center of the roundabout.

Typical Design Characteristics of a Modern Roundabout



A modern roundabout includes several distinct features that improve operating efficiency and safely. Redrawn from FHWA, 2000, *Roundabouts: An Informational Guide.*

- Vehicles are "deflected" with splitter islands as they enter, which also creates crosswalk refuges for pedestrians.
- Crosswalks are set back from the center of the roundabout.
- The radius of the central island is large enough to deflect circulating traffic and often has a mountable "apron" to accommodate the turning radius of large vehicles.

Single-lane roundabouts, such as the one shown on this page, can handle 10,000 to 20,000 entering vehicles per day. Double-lane roundabouts can be used on four-lane streets that carry more than 20,000 vehicles per day and accommodate many large vehicles. In many circumstances, roundabouts can accommodate vehicular capacities that are equal to or greater than a conventional signalized intersection.

Roundabouts may require more right-of-way than conventional four-leg intersections, especially at corners. The "inscribed diameter" of a roundabout ranges from 100 to 150 feet for single-lane roundabouts, and from 150 to 230 feet for double-lane roundabouts.

Roundabouts have both advantages and disadvantages for pedestrians. The pedestrian crossings at splitter islands result in shorter crossing differences and improve drivers' view of pedestrians. In addition, the slower vehicle speeds in a roundabout improve pedestrian safety, and traffic can only come from one direction at any given point on the crosswalk. However, pedestrians must wait for gaps in traffic before they cross. Roundabouts also cannot provide the visual and audible guidance that is offered by signalized intersections, which is especially important for the elderly as well as people with visual impairments.

Similarly, roundabouts have both benefits and drawbacks for bicyclists. While bicyclists benefit from the roundabout's slower vehicle speeds, they may experience conflicts with entering and exiting vehicles. Some roundabouts direct bicyclists onto a wide sidewalk where they can avoid riding within traffic.

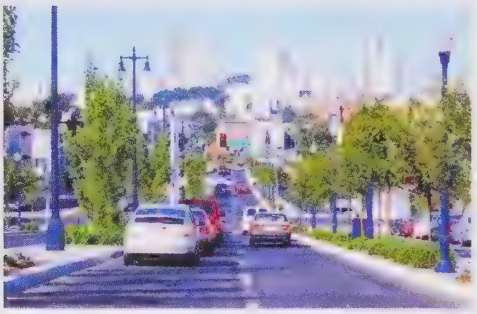
5.3 Solutions to Street Design Issues

This section explains how to address some common challenges that arise when designing multimodal streets.

5.3.1 Multimodal Design of Wide Arterial Streets

See Also
"Transformation of Existing Places" on page 20

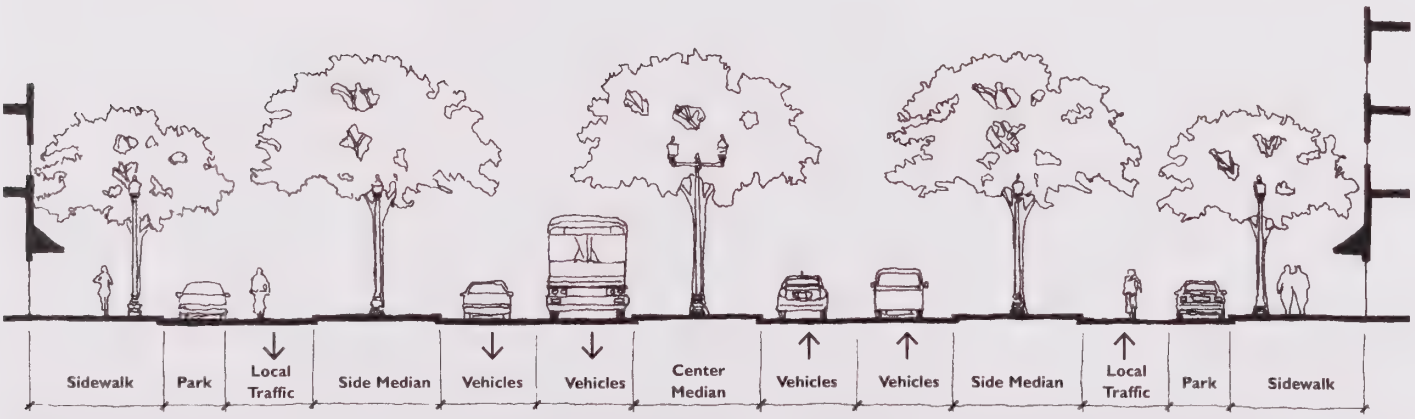
Communities may want to provide high vehicular mobility and a pedestrian-friendly environment on the same major arterial street, or they may be faced with excessively wide streets. The solution to these challenges is the multiway boulevard, which combines a high-capacity central roadway with slower, low-volume, pedestrian-oriented access lanes on each side of the street. The central roadway accommodates through movement. The access lanes accommodate on-street parking, loading, bicycle travel and access to abutting properties, as well as wide sidewalks that are separated from the central roadway by tree-lined medians. Pedestrians cross multiway boulevards in stages, using pedestrian refuges on the medians.



Multiway boulevards, such as this portion of Octavia Boulevard in San Francisco, California, provide room for through and local traffic, as well as space for bicyclists and pedestrians.

Chapter 2 includes a visual simulation showing how part of Palm Avenue in Imperial Beach could be transformed into a multiway boulevard.

- Use traffic signals to control through traffic on the central roadway and major cross streets. Use stop signs to control traffic on the access lanes.
- At signalized intersections with high traffic volumes, assign vehicular right-of-way from cross streets and access lanes using separate signal phases. Alternatively, restrict vehicles and bikes to stop-controlled through movement on the access lanes, rather than allowing them to turn across the central roadway.
- Use a multiway boulevard's central roadway for transit service, with bus stops located on the medians between the access lane and the through lanes.



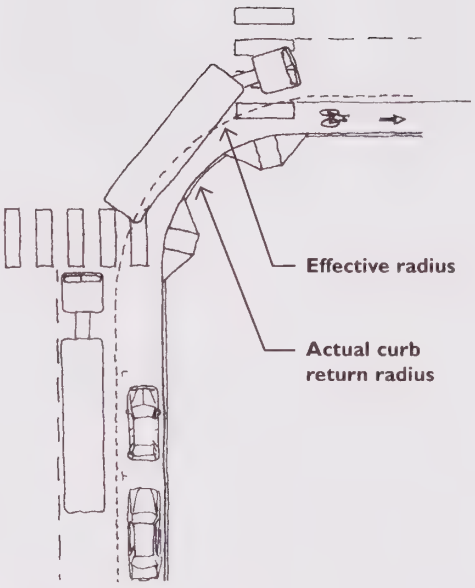
A multiway boulevard provides center lanes for through traffic, as well as sidewalks and side access lanes for local traffic, pedestrians and bicyclists.

- Direct bicyclists to the local access lanes, using shared lane markers where adjacent to on-street parking.
- Design buildings adjacent to a multiway boulevard so that they front directly onto the access lanes.
- Keep access lanes narrow, and require frequent stops to discourage speeding.

5.3.2 Large Vehicles and Emergency Access

Delivery trucks and emergency vehicles are critical to a community's economic vitality and safety, and these types of vehicles must be accommodated in a multimodal street network. Some streets must also be designed for the safe operation of large buses.

In pedestrian-oriented areas, street designers must consider both a "design vehicle" and a "control vehicle." A design vehicle must be accommodated without encroachment into opposing lanes, because it uses the street frequently. Examples include buses on routes that frequently turn a corner. Control vehicles, such as fire trucks responding to an emergency or delivery trucks that arrive once or twice a week, use the street less frequently. Streets can be designed so that control vehicles encroach into opposing travel lanes, which allows for narrower lanes and a smaller, pedestrian-friendly curb return radius.



Street designers must consider the effective turning radius of vehicles that will use the street.

In addition, the national fire code requires a minimum 20-foot clear distance on streets, and some local fire codes require a 24-foot clear distance. This clearance is relatively easy to provide on major thoroughfares. It can also be provided on narrow local streets through creative design.

- Consider the "effective" turning radius on streets with on-street parking and bike lanes.
- On narrow streets with small curb return radii, accommodate the turning movements of large vehicles by installing flush curbs at corners, potentially using bollards to demarcate the pedestrian waiting area and protect aboveground utility equipment.
- Set back stop lines in opposing travel lanes, so that control vehicles can safely encroach upon the lane.
- Increase street connectivity so that emergency access vehicles have alternative routes.
- Consider providing alleys to create a secondary approach to structure fires. As secondary approaches, alleys need not be designed for the largest fire vehicle.
- On narrow streets with long blocks, provide "no parking" zones that allow drivers to pull out of the way of emergency vehicles and provide space for emergency vehicles to stage their operations.
- Use computer modeling or field demonstrations to ensure that emergency vehicles can turn corners with encroachment into opposing lanes.

Context Sensitive Solutions

Context Sensitive Solutions (CSS) refers to the practice of designing streets that serve all users and are compatible with the surroundings through which they pass, including the built environment as well as the natural environment. These solutions are developed within a collaborative, interdisciplinary process that involves all stakeholders starting early in planning and carried through design. The application of CSS results in a street that:

- Meets the needs of all users and stakeholders
- Fits with its setting and preserves scenic, aesthetic, historic and environmental resources
- Respects design objectives for safety, efficiency, multimodal mobility, capacity and maintenance
- Integrates community objectives and values relating to compatibility, livability, sense of place, urban design, cost and environmental impacts

The use of CSS in the design of a street considers a broad range of objectives and competing interests. It attempts to balance these objectives and interests based on the needs and conditions specific to the street and its surroundings. In essence, CSS recognizes that "one size does not fit all" and strives to develop solutions that best meet everyone's needs.

Source: Adapted from Institute of Transportation Engineers, 2006, *Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities: An ITE Proposed Recommended Practice.*

- On major thoroughfares with medians and recurring congestion, provide breaks in the median with mountable curbs, so emergency vehicles can cross into opposing travel lanes.
- Explore various street width and parking combinations to achieve the proper clearance. For example, alternating parking from one side of the street to the other, or providing space for vehicle pullouts, allows for a 28-foot-wide residential street.
- Encourage fire departments to acquire smaller, more navigable equipment designed for narrower streets.
- Identify streets with greater width requirements, such as streets adjacent to mid- and high-rise buildings and streets where fire stations are located. Require a larger clear traveled way on these streets.

5.3.3 Multimodal Street Design on State Highways

A number of the San Diego region's surface streets are State highways under the jurisdiction of the California Department of Transportation (Caltrans). The design of these streets is controlled by Caltrans and is subject to the State's design standards. During redevelopment projects, and during the planning of improvements to State highways, the community may request street design features that conflict with State standards. Caltrans' "design exception" process provides flexibility in the application of these standards.

Some desired design features may not be acceptable to Caltrans even if the local jurisdiction regularly includes these features on their streets. However, Caltrans has a policy to integrate Context Sensitive Solutions into their transportation projects, as well as special "Main Street" guidelines for local streets that are also State highways. Caltrans will work with municipalities and the community to find mutually acceptable solutions. The following guidelines explain how to work effectively with Caltrans throughout the design process.

- Involve the State in the earliest stages of planning projects located adjacent to a state highway.
- Include Caltrans as a key stakeholder in all stages of the project, but especially when proposing any change to a State highway or connecting street.
- Work collaboratively with the State and all other stakeholders to define a vision, goals and objectives, and a purpose and need statement for the project.
- Identify potential disagreements early in the process, and resolve them quickly to avoid delaying the project in its last stages of planning.
- Understand Caltrans' Project Development and design exception process, since these are the mechanisms through which any changes to standards will be accepted.
- Before creating street designs, discuss design flexibility with the State's design engineers and establish the range of acceptable options.

Alternative Transportation Performance Measures

Automobile levels of service are a useful tool for understanding vehicle flows but ignore other criteria. A full evaluation of a multimodal transportation system requires a variety of performance measures. Some examples include:

Traffic Measures

- Corridor travel times
- Duration of congestion
- Vehicle miles traveled (VMT) or passenger miles of travel (PMT)
- Average vehicle occupancy

Alternate Modes

- Share of travel by various modes
- Percentage of automobile trips shifted to other modes
- Pedestrian and bicycle level of service (LOS)

Street Connectivity and Walkability

- Number of intersections per square mile
- Ratio of street segments to intersections
- Ratio of direct travel distance to actual travel distance
- Percentage of streets with sidewalks on both sides
- Percentage of major destinations within 15-minute walk

Bike Travel

- Continuity of bicycle facilities throughout community
- Linear feet of bike lanes or multi-use paths
- Direct access to major activities/key destinations
- Number of bicycle parking facilities
- Number of intersections with enhanced treatments for bicycles such as detectors, bike lanes and bike boxes

Public Transit

- Transit travel speed, relative to driving the same trip by car
- Number of jobs/residences within walking distance of bus stops
- Transit demand

5.4 Traffic Calming

Traffic calming involves a combination of public education, enforcement and engineering measures that encourage safer speeds, alter driver behavior and improve conditions for non-motorized street users. Traditionally, traffic calming measures were restricted to low-volume residential or commercial streets, and most measures are best suited to this context. While major thoroughfares must move large amounts of traffic efficiently, there are also traffic calming measures that can manage vehicle speeds on these streets, which improves safety and comfort for pedestrians and bicyclists.

5.4.1 Program Design

Traffic calming involves context sensitive design practices, requiring flexibility in the application of design standards so that the program reflects community values and a balance among objectives.

- Understand the problem and its root causes. Determine if the problem is real or only perceived.
- Involve the community in the process of understanding the problem and developing a solution. Use the process as an educational opportunity.
- Develop guidelines for working with the community, evaluating potential solutions, obtaining community consensus, and monitoring effectiveness of traffic calming plans.
- Involve representatives from local jurisdictions' departments and service providers, including planning, public works, fire, police, maintenance and refuse collection.
- Plan comprehensively and develop solutions for the broader neighborhood, to avoid pushing problems from one street to another.
- Consider a variety of traffic calming solutions, rather than relying on a single measure. The most successful solutions are a combination of measures.
- Look beyond simply slowing or diverting traffic. Solutions should support multiple objectives, including enhanced street aesthetics, improved walking and cycling conditions, and controlling speeds.

5.4.2 Traffic Calming for Local Streets

Many different engineering solutions can be used to calm traffic on local streets. SANDAG's *Planning and Designing for Pedestrians* includes a toolkit of traffic calming measures.

- To reduce vehicle speeds, consider vertical deflections such as speed humps, speed cushions, speed tables and raised intersections; horizontal shifts, such as traffic circles, roundabouts and chicanes; and street narrowing, by providing a "choker" or a center island.
- To reduce or eliminate cut-through traffic, consider closing streets or installing diverters that create dead ends. Provide for bicycle access through traffic diverters.

See Also
Planning and Designing for Pedestrians

Bulbouts such as this one in Oakland, California, narrow streets and provide space for pedestrian amenities.

5.4.3 Traffic Calming for Major Thoroughfares

Major thoroughfares, such as arterial streets, are intended to carry greater volumes of traffic and large vehicles on a frequent basis. They are primary emergency response routes and are intended to accommodate through traffic. While traditional traffic calming measures are not appropriate on these streets, a variety of "speed management" measures can be used so that drivers travel at the posted speed limit.

- Narrow the street physically, using medians and curb bulbouts; perceptually, using lateral lane striping and different paving treatments; or using landscaping and buildings to better define the edge condition for the street.
- Time the progression of traffic signals along an arterial to the desired speed, so that speeding vehicles will arrive at the signal before it turns green.
- Post radar feedback signs or trailers that inform motorists of their speed.
- Consider using roundabouts at intersections, which require drivers to travel at a safe speed.

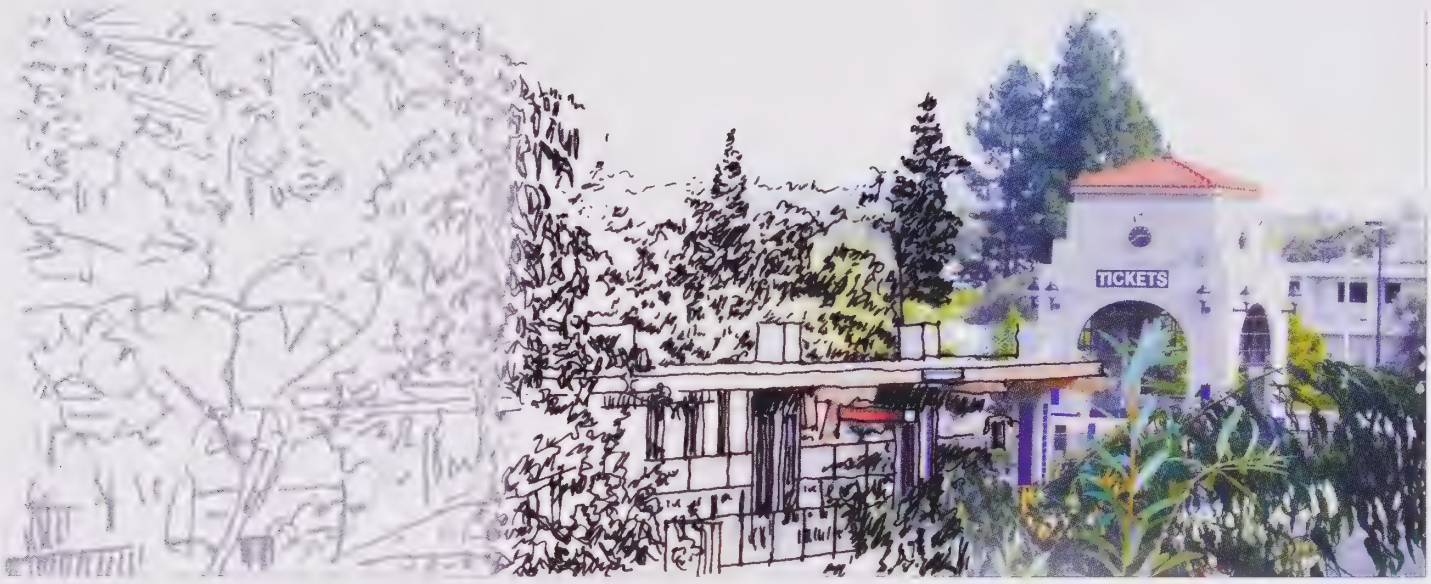
Street trees can contribute to traffic calming by defining a strong edge for the street, as shown in this example from San Jose, California.

5.5 Stormwater Runoff

Streets make up about 60 to 70 percent of impervious surfaces in urban areas and have direct connections to underground stormwater systems. Runoff from impervious surfaces can overwhelm stormwater systems, causing flooding and erosion, increased sedimentation and damage to natural habitats. The pollutants in runoff can also degrade water quality. When streets are redesigned, Best Management Practices (BMPs) can be used to accommodate stormwater runoff through infiltration, retention or detention, biofiltration, or mechanical filtering, screening and de-sedimentation. These measures help to delay or prevent the movement of runoff into the storm drain system, as well as filter sediment and pollutants from runoff.

- Minimize street widths to reduce impervious surfaces.
- Where possible, use permeable planting strips, swales or permeable paving to allow infiltration of runoff from sidewalks.
- In more rural areas, direct runoff into biofilters or swales rather than underground storm drains.
- In more urban areas, design curb and gutter systems that allow stormwater to drain into swales running behind the curb, or into biofiltration units or rain gardens.
- Consider using biofiltration systems within median islands or bulbouts.
- Install commercially available traps, filters, and detention or retention devices that capture pollutants, as well as particulate matter such as dirt and leaves.

Permeable surfaces, such as this landscaped bulbout in La Jolla, reduce stormwater runoff.



CHAPTER 6
TRANSIT STATIONS

One of the keys to creating lively, compact and walkable communities is the availability of transportation options that provide convenient alternatives to the personal automobile.

As Chapter 5 of this document explains, streets can be designed to accommodate buses and trains as well as pedestrians, bicyclists and automobiles. However, public transit also depends upon off-street transit stations, including bus depots; off-street trolley and commuter rail stops; and intermodal stations, where people can transfer between buses, trains and commuter shuttles. This chapter explains how off-street transit stations can be designed so they are conveniently located and universally accessible.

6.1 Location and Features

This major transit station is located at San Diego State University.

To encourage people to use buses, trains and commuter shuttles, transit stations must be comfortable and logically configured. They must also be accommodating to pedestrians, bicyclists and drivers alike.

6.1.1 Station Location

Transit stations are likely to draw more riders if they are located in areas that attract many visitors and workers, and if they provide nearby amenities that benefit commuters.

- Locate transit stations at or near major trip generators such as sports venues, concert halls, schools, offices and shopping areas.
- Provide frequently-used services near transit stations, such as dry cleaners, coffee shops, restaurants and childcare facilities. To encourage patronage of these businesses, place them between vehicle parking areas and the transit stop.

Convenient transfer points between modes of transportation encourage increased transit ridership at the Oceanside Transit Center.

6.1.2 Intermodal Connections

Many transit trips require people to transfer between buses, trains and shuttles. Transit stations should be designed to make these transfers as simple and convenient as possible.

- Minimize walking distances between different modes of transportation.
- Allow pedestrians to transfer between modes without crossing major thoroughfares or walking through large parking lots.
- Group bus stops together into one part of the transit station.
- Where passengers often transfer between two bus routes, locate the stops for each route close to one another.
- At transit stations that are near large employers, provide space for commuter shuttles.
- Incorporate space for taxi queueing where demand warrants.
- Post clear, easy-to-read signs that provide direction for how to transfer between different transportation modes and transit operators.
- Provide fare information and timetables at points of transfer, along with maps showing transit routes and connections to other transit services.

6.1.3 Pedestrian and Bicycle Access

Many people arrive at transit stations by walking and biking, and most transit riders will have a short walk to their destination at the end of their trip.

- Design stations to provide for pedestrian and bicycle access, and plan for improved facilities where needed to support pedestrians and bicyclists.
- Provide direct, logical paths from the street to passenger waiting areas.
- Include pedestrian and bicycle connections that link the station to nearby homes, businesses, offices and civic buildings.
- Post "bike parking" directional signs at entrances to the transit station.

See Also
"Links to Transit"
on page 41

6.1.4 Passenger Waiting Areas

Thoughtfully-designed waiting areas create a more welcoming environment for passengers.

- Provide aesthetically pleasing bus shelters that offer protection from sun, wind and rain.
- Post transit schedules and route maps at all waiting areas.
- Display real-time arrival information for buses and trains if available, and ensure that it can easily be viewed from all waiting areas.
- Provide adequate, well-lit seating at all waiting areas. For safety, design the waiting area so that passengers can see what is around them at all times.

This passenger waiting area in Oceanside includes shelters and plentiful seating.

6.1.5 Vehicle and Bicycle Parking

Adequate bicycle parking must be available at transit stations. Vehicle parking should also be provided, with appropriate policies that encourage people to use local transit service to reach the station.

- Locate bicycle parking in places with high foot traffic, so that it receives natural surveillance from passersby.
- Provide secure bicycle parking in the form of bike lockers or "bike stations" with valet parking. Use bike lockers that clearly indicate when they are occupied, so station patrons can see they are being used.
- Design transit stations to provide for increased bicycle parking in the future as mode share increases.
- Incorporate an appropriate amount of vehicle parking, using parking structures wherever possible. Manage demand by charging a fee for parking where appropriate.
- Place surface parking lots in clusters that are large enough to be developed in the future with mixed-use buildings, offices, townhouses, multi-family dwellings or parking structures.

See Also
Regional Bicycle Plan

Secure bicycle parking in Oceanside encourages people to bike to the transit station.

6.2 Universal Design

The Americans with Disabilities Act requires transit stations to be designed so that anyone can access and use them, regardless of their physical abilities. This requirement ensures that public transit is available to all.

This transit station in Vista has boarding platforms that are suitable for people of all ages and physical abilities.

- Provide wide, level and smooth paved surfaces in boarding areas. Avoid changes in grade or obstacles that could pose a tripping hazard or interfere with the movement of baby strollers and bicycles.
- Connect different parts of the station to one another and to the adjacent street with low-slope ramps and wide, flat paths.
- Where escalators must be used to provide access to part of the transit station, provide an elevator as close to the escalators as possible.
- Ensure that all seating areas also provide adequate space for people in wheelchairs.

6.3 Signage

All passengers must be able to find information about how to use the transit station and connect to surrounding areas. Signage must meet the needs of frequent transit riders who need to find schedule or route information quickly, as well as new riders who may not be familiar with the station or its surroundings.

- Design signs with typefaces that are easy to read even in dim lighting.
- Place signage where it is highly visible and easy to locate for people entering the station, as well as for passengers who are waiting for a train or bus.
- Provide schedule information and route maps for all routes that use the transit station.
- Display maps that show the transit system as a whole, as well as local maps of the station that indicate connections between different routes and modes of travel.
- At bus stops, display schedules that use a clear symbol to indicate when the bus connects to another mode of travel, such as a commuter train.
- Integrate accessibility features such as Braille signs and audible announcements of upcoming train or bus arrivals.

Low-slope ramps at this transit station in Encinitas provide accessibility for all.

Public art calls attention to this informational sign in San Diego.

CHAPTER 7
CIVIC BUILDINGS

Schools, libraries, police and fire stations and recreation centers are the interface between government and the communities they serve. Civic buildings house the many activities that facilitate daily life, provide safety and security, encourage health and happiness and provide opportunities for civic participation. Civic buildings that demonstrate significant levels of investment and care communicate that a community values civic life and encourages people to become an active part of the greater community.

7.1 Civic Buildings as Community Assets

Civic buildings have the potential to function as the "heart" of a neighborhood. The planning and design of civic buildings is an opportunity to reflect the values and character of a community and create enjoyable gathering places.

A pool and plaza mark this entrance to the Oceanside Public Library.

7.1.1 Civic Buildings as Gathering Places

Civic buildings can create opportunities for all members of a community to come together. To encourage civic participation and greater opportunities for interactions between people, civic buildings should provide community gathering places.

- Incorporate opportunities for community gathering into a variety of civic buildings, especially civic buildings that are located within neighborhoods, such as schools, fire stations and libraries.
- Create welcoming entries and comfortable waiting areas in all civic buildings.
- Incorporate limited types of retail, such as cafés, into civic buildings that have numerous visitors, such as museums and city halls.

See Also
Chapter 8: Parks and Civic Space

7.1.2 Civic Buildings and Public Open Spaces

There is a synergistic relationship between civic buildings and public open spaces, such as parks and plazas. Both are civic spaces that foster community participation. Civic buildings, especially schools and recreation centers, should incorporate outdoor public spaces, such as playgrounds, parks and plazas. Coordinating the siting and design of parks and civic buildings can create memorable civic spaces that function as the heart of a community. Liability issues and jurisdictional or interagency conflicts can make this coordination process difficult, but the benefits can be significant, particularly in places that are underserved by open space.

- Locate public open spaces adjacent to civic buildings to promote community gatherings and emphasize the importance of civic buildings.
- Where feasible, facilitate public access to school fields and recreation areas after hours.

The City Heights library in San Diego is located adjacent to a community park.

7.1.3 High-Quality Design

Civic buildings and institutions are a great source of pride for communities. Their design should reflect a high level of care and investment. Security measures should not detract from the building's welcoming character, quality of design or attractiveness. Involving community members in the design process can help to create a sense of ownership and produce buildings that convey a community's character and values.

- Involve community members in the design of new civic buildings.
- Design any safety barriers around civic buildings so as not to detract from accessibility, visibility or aesthetic quality.
- Design civic buildings to respect the massing, setback and height of neighboring buildings.

See Also
Chapter 4: Building Design

The Natural History Museum in San Diego's Balboa Park exhibits high-quality design.

7.2 Civic Buildings in the Community

In the early 1920s, Clarence Perry developed the idea of the neighborhood unit, a planning concept that envisioned the neighborhood as the basic planning unit of towns and cities. The neighborhood unit concept influenced the design of many American "new towns" but was largely lost with the advent of automobile-dependent suburban sprawl. Perry's concept includes many elements that are precursors to the principles of smart growth. A neighborhood is defined as an area that is contained within a comfortable walking distance, includes housing and local retail and is centered on an important civic building, such as a school. The integration of accessible civic buildings creates attractive, efficient and walkable neighborhoods where people want to live.

- Locate civic buildings with a community-wide purpose in a central location that is well served by public transportation, so that they are easily accessible to all community members.
- Locate schools, fire stations and other neighborhood-serving civic buildings within the neighborhoods they are intended to serve.
- Prioritize street and sidewalk improvements near civic buildings to provide safe routes amenable to walking and biking.
- Locate civic buildings close to other community amenities, such as commercial and employment centers, to allow users to combine trips.

This library is located within a residential neighborhood in San Diego.

7.3 Universal Design

Civic buildings should incorporate principles of universal design so that all members of the community can access services. Rather than relying on separate entries for people with reduced mobility, universal design encourages integrated solutions that make civic buildings usable and equally accessible for all.

- Use building articulation or other architectural design solutions to identify the primary entrance to a civic building.
- Provide a single point of entry that is accessible for everyone regardless of their level of mobility.
- Orient the primary entrance of a civic building towards a public street or plaza.

Community members of all physical abilities can use and enjoy public buildings, such as this library in Encinitas, when they are designed with universal access.

See Also
Chapter 4: Building Design

7.4 Signage

Signage and wayfinding tools help community members to locate and use civic buildings.

- Use clear signage to identify civic buildings and the amenities they include.
- Create a network of clear wayfinding signs to guide people to the location of civic buildings.
- Clearly distinguish paths and locations where the public is welcomed and where access is limited.

The entrance to an elementary school in Berkeley, California, is identified by clear signage.

CHAPTER 8
PARKS AND CIVIC SPACE

The availability of public open spaces contributes to the attractiveness of a neighborhood, increases local environmental quality and helps to create healthy, active neighborhoods. Public open spaces, including parks, plazas and natural areas, can provide much-valued "breathing room" within compact communities. They provide a venue for people to recreate and gather, thus fostering a shared sense of identity. The region's two bays, five rivers, six lagoons and many canyons are open spaces that help define the boundaries of many communities, providing natural habitat and recreation areas. In addition to enhancing the community's social environment, public open spaces also contribute to sustainability by combating air pollution, reducing water pollution and creating habitat for local plants and animals.

8.1 Public Open Space Types

A variety of sizes and types of public open spaces are required to meet the varying needs of a community. Designers should consider these needs, as well as the existing network of public open spaces, when planning for a new public open space.

8.1.1 Regional Parks and Natural Open Spaces

Regional parks are large areas of parkland that are typically found at the periphery of cities, although they can be located within a city as well. They are community amenities of ecological, aesthetic and historical significance. Regional parks often contain or are adjacent to natural, protected open spaces, which are lands that have been preserved to conserve ecologically important resources. Also, they often contain specialized amenities that require large amounts of space, such as zoos, marinas and golf courses.

See Also
Chapter 3: Site Design
Chapter 4: Building Design

Access to the ocean is one of the San Diego region's most valued assets.

Because of their size and unique qualities, regional parks and natural open spaces serve multiple communities and are often destinations for people from outside of the region. In addition, these spaces frequently define the boundaries of development, making it important to consider potential fire risks for surrounding development in the event of a wildfire.

- Preserve natural open space and other sensitive lands for the benefit and enjoyment of future generations.
- Link regional parks and natural open spaces to the communities they serve with trails, greenways, boulevards, bicycle routes and transit.
- Where urban development abuts a natural open space that is susceptible to wildfires, ensure that the surrounding buildings and landscaping are designed to mitigate fire risks.

Mission Trails Regional Park provides natural open space for the region.

8.1.2 Community Parks

Community parks serve multiple neighborhoods and are large enough to support community-wide activities such as athletic events, concerts and festivals. They can provide areas for active and passive recreation and formal and informal use. Community park facilities are often lighted for night use. Amenities may include tennis courts, swimming pools, sports fields, basketball courts and larger group picnic and gathering spaces.

- Locate community parks where they are accessible from multiple neighborhoods.
- Activate community parks by locating complementary uses adjacent to them. These might include libraries, community centers, or houses that face the park, as well as small shops and restaurants that create activity in the park.
- Link community parks to greenways, boulevards, bicycle routes and transit.

A community park in Encinitas provides recreation facilities and helps to strengthen community identity.

8.1.3 Neighborhood Parks

Neighborhood parks provide opportunities for recreation at a smaller scale and should be distributed throughout neighborhoods, so that every community member lives within an easy walking distance of a neighborhood park. These parks are usually within walking distance of surrounding homes and contain amenities such as children's play areas, multi-use fields and family picnic areas.

- Distribute neighborhood parks throughout the community, so that all neighborhoods are served.
- For safety, design neighborhood parks to maximize visibility from the street and adjacent homes.
- Link neighborhood parks to greenways, boulevards, bicycle routes and transit.
- Locate neighborhood parks near other public institutions, such as schools, whenever possible, so they can share larger facilities such as ballfields.

8.1.4 Pocket Parks and Playgrounds

Pocket parks are typically very small parks, often built on a single parcel in an existing neighborhood or developed as part of a larger project. Because of their small size, they can be distributed throughout a community, playing a key role in providing access to open space for all. Pocket parks in residential areas usually include a combination of seating areas, play areas and landscaping, while urban pocket parks often contain seating, hardscaped and landscaped areas and features such as fountains. Playgrounds can also be designed as pocket parks that occupy one or two parcels in a neighborhood.

- Site pocket parks in neighborhoods that lack access to open space.
- Use pocket parks to provide small-scale amenities, such as playgrounds, where those amenities are most needed.
- Encourage the development and stewardship of pocket parks through public and private partnerships.
- Ensure that pocket parks are visible and accessible from a public sidewalk.

Playgrounds such as this one in Imperial Beach provide a safe place for children to play near people's homes.

Public plazas such as this one in San Diego provide space for people to relax.

Small plazas can also be part of a pedestrian network, similar to the downtown path along San Luis Obispo Creek in San Luis Obispo, California.

This community garden is located in San Diego's Pacific Beach neighborhood.

8.1.5 Plazas and Piazzas

Plazas and piazzas create an excellent opportunity for placemaking in intensively developed areas. In most cases, plazas are spatially defined by buildings and are related to adjacent uses. They provide important spaces for formal and informal community gatherings, and their design should be coordinated with new development. While plazas should be large enough to accommodate everyone who wants to use them, they should also be small enough to create an active, lively feel when they are occupied.

- Locate plazas and piazzas in places that attract large amounts of foot traffic, so that they feel active and well used.
- Limit the size of plazas and piazzas to approximately 150 to 300 square feet per person, based on the typical number of people that will occupy the space when it is being used.
- Ensure that buildings open onto plazas and their uses expand into the space.
- Provide a focal point for pedestrian gathering in the center of the piazza or plaza.
- Locate plazas and piazzas where they are visible from the street.
- Provide clear transitions between plazas and streets.
- Develop plazas and piazzas to maximize circulation opportunities between adjacent buildings.
- Coordinate the location of transit stops with plazas and piazzas.

8.1.6 Community Gardens

Community gardens are small neighborhood spaces used as gardens, typically found on a single parcel within a neighborhood. Many community gardens are the result of collaborative efforts by local residents and non-profits to transform a vacant lot into a productive garden. By including space for community gardens, new development can provide gardening opportunities for everyone, regardless of whether their homes have private yards.

- Include areas for community gardens within new residential projects and neighborhoods.
- Work with landowners, non-profit organizations and community groups to facilitate the creation of community gardens on vacant parcels, especially in places that are accessible by public transit, on foot or by bike.
- Provide at least 30 square feet for each plot in a community garden.
- Include a mix of plot sizes, so the garden can accommodate casual gardeners as well as people who desire additional space.
- Provide amenities such as hoses and faucets, lockable equipment storage, potting tables, greenhouses and shaded seating areas.
- If the garden is fenced or gated, use a semi-transparent fence that provides views in and out.

8.1.7 Festival Streets

Festival streets are public throughways designed so that they can be closed to vehicles and used as a temporary plaza. They contain numerous pedestrian amenities such as seating and landscaping, and they may lack curbs to facilitate their transformation into a plaza-like space. Festival streets are a valuable addition to any community because they can be used for many different activities, such as annual festivals and celebrations or weekly farmers' markets.

- Locate festival streets at or near community centers or other focal points that have a high potential for pedestrian access.
- Redesign streets that are already being used as festival streets to facilitate easier access and more regular use.

See Also
Chapter 5: Multimodal Streets

Streets such as this one in Berkeley, California, can become temporary plazas for community events.

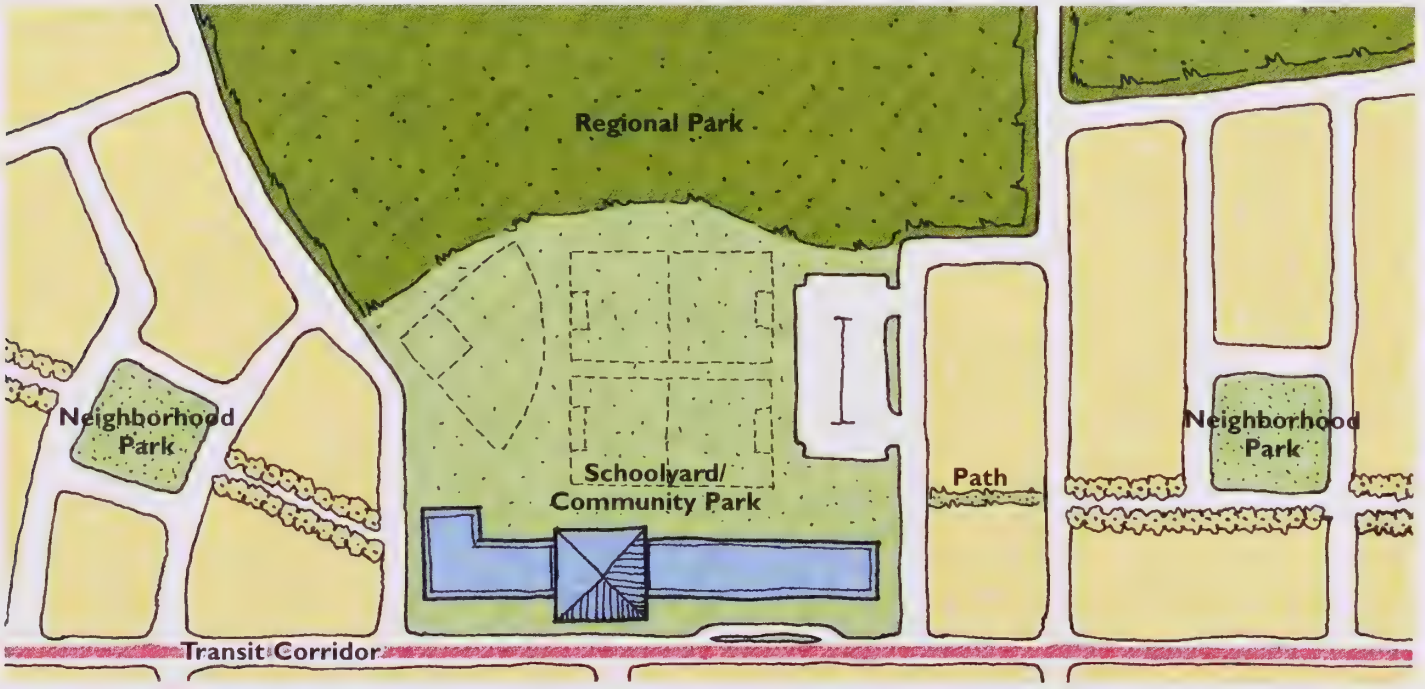
8.2 Principles for Parks and Civic Space

This section outlines basic principles that designers should follow for any public open space. This section also discusses how individual spaces can be joined together into citywide and regional networks of public open spaces.

8.2.1 Open Space Connections

Public open spaces should be connected by greenways, trails, boulevards and bicycle routes, effectively unifying the community and enabling residents to walk or ride a bike to public open spaces.

- Develop a system of greenways and boulevards to create a park and open space network. Use signage as necessary to help identify the network.
- Connect greenways and boulevards to community resources, such as schools, shopping areas, transit stops, employment centers, residential neighborhoods and public open spaces.
- Balance recreational needs with habitat preservation when developing natural greenways as access corridors.



Connections between different types of open space create a network, encouraging greater use and enabling people to walk between open spaces.

8.2.2 Community Identity and Character

Public open spaces create opportunities for people to gather and celebrate their traditions and heritage. These interactions reinforce a shared sense of community. The design of public open spaces can help to facilitate these interactions and strengthen a neighborhood's unique sense of place.

- Design areas within public open spaces that encourage neighborhood gatherings.
- Include materials, thematic elements and other design features that reflect the unique architectural, cultural and ecological characteristics of the surrounding community.
- Incorporate public art into the design of new public open spaces. Consider using public art to address important issues or themes that are relevant to the neighborhood or community.

In El Cajon, community members use a park for formal and informal gatherings.

8.2.3 Landscaping and Amenities

The design of a public open space should include amenities that help to create an active, well-used space that will be valued for years to come. It is also essential for a park's landscape design to balance water conservation with the need to create an appealing space that supports outdoor recreation. Chapter 3 of this document provides more details about climate-appropriate landscaping in the San Diego region.

- Design parks to encourage both formal and informal use by balancing the amount of programmed space with more flexible, un-programmed space.
- Provide seating areas that are coordinated with shading, landscaping, lighting and views to focal points.
- Use high quality materials for the construction of public open spaces.
- Consider future maintenance needs when planning new public open spaces.
- Provide well-maintained public bathrooms, with entrances that are visible to passersby.

See Also
"Energy Conservation and Landscaping" on page 42

Seating and flexible play areas encourage the use of this park in San Diego.

A restored creek in Vista provides a naturalistic public open space.

8.2.4 Access to Natural Areas

Access to natural areas promotes physical activity and psychological health, which can translate to social and economic benefits. It can help develop an appreciation and respect for the natural environment that engenders support for habitat preservation and stewardship of natural areas.

- Provide opportunities for contact with nature within the city by incorporating naturalistic areas and native vegetation into public open spaces.
- Protect natural open spaces by providing for controlled, limited public access that preserves essential plant and animal habitat.
- Design and site public open spaces to preserve scenic views of natural areas, including hills, mountains, canyons and the coast.

A universally accessible pathway in Encinitas allows all members of the community to use this park.

8.2.5 Universal Design

All members of the community must have equal access to public open spaces and their amenities. The goal of universal design is to ensure that all users, including people with disabilities, can enjoy public open spaces.

- Provide easy and direct access to all public open space facilities.
- Site public open spaces in a manner that allows visibility and open access from surrounding streets and sidewalks.
- Provide amenities such as seating, play equipment and picnic areas that can be used by people with many different levels of mobility.
- Design all pedestrian pathway surfaces so that they are smooth, continuous and without obstacles.
- Provide signage and information in a variety of formats (written, symbolic, tactile and verbal) to ensure communication with all park users regardless of their abilities.

CHAPTER 9
PARKING

A primary goal of smart growth is to enable people to modify their travel behavior by using alternate modes of travel, reducing trip length and combining trips. As a result, communities that reflect the principles of smart growth will have a reduced number of vehicle trips and vehicle miles traveled. However, not all vehicle trips will be replaced by transit, walking or bicycling trips. A well-designed place must accommodate all modes of travel, including the automobile. The challenge for designers is to provide a parking supply that is slightly constrained but does not deter customers, frustrate tenants or create problems for nearby residents. It is also essential to accommodate parking while still creating walkable, pedestrian-oriented streets.

9.1 Surface Parking

See Also
Chapter 3: Site Design

Surface parking lots are a convenient, economical way to provide vehicle parking. When they are designed well, they can fit into a neighborhood without being visually obtrusive.

As densities in a Smart Growth Area increase over time, surface parking lots should gradually be replaced by other forms of parking that make more efficient use of the land, including shared parking garages, podium parking, and below-grade parking. New development should not include surface parking lots in areas where structured parking is already prevalent.

9.1.1 Placement

Parking lots should be visually separated from the street, as well as the surrounding residential uses.

- Place parking lots behind buildings wherever possible, so that pedestrians can access buildings more easily and to ensure that buildings have a visual presence on the street.
- If a parking lot is adjacent to a residential area, provide fences, walls and landscaping to create a buffer around the back and side of the lot.

9.1.2 Design Features

See Also
"Energy Conservation and Landscaping" on page 42

Landscaping and pathways make parking lots more attractive and functional. They also help to buffer parking lots from surrounding uses.

- Provide clearly marked pedestrian paths between all parking areas and the buildings they serve. Highlight these paths with decorative paving, trellises, canopies and similar improvements.

A pedestrian path leads to a shared parking lot behind these buildings in Oakland, California.

A decorative gate and fence screen a parking lot in Berkeley, California.

- Use landscaping and pedestrian paths to divide large parking lots into smaller units, and provide lighting along these paths.
- Plant canopy trees throughout the parking lot to provide shade and create visual interest.
- Where parking lots are adjacent to a street, use low walls and attractive, varied landscaping to provide screening.
- Use downward-directed lighting and cut-off shields to avoid casting light onto adjacent properties or into the sky.

9.2 Parking Garages

Parking garages must be designed so that they are well integrated with their surroundings. Careful attention to architectural detail can conceal the special-purpose nature of parking garages, allowing them to fit the context of nearby buildings. Chapter 2 provides a visual simulation showing how a new parking garage that meets these principles could fit into La Mesa.

See Also
"Transformation of Existing Places" on page 20

- Use horizontal lines on exterior façades to separate each floor, rather than reproducing the sloping condition of the interior structure.
- Break up the building's façade with vertical elements, such as projecting columns and offset wall planes, as well as variations in color, texture and materials.
- Provide openings on each floor of the garage that adequately screen vehicles while creating a sense of transparency.
- Limit the height and bulk of parking structures so that they are reasonably consistent with adjacent buildings.
- Reinforce the pedestrian realm by wrapping the parking garage with retail or office uses.
- Use projecting elements, awnings or other architectural details to highlight pedestrian entrances to the garage.

This garage in San Diego is wrapped by active uses at the street, and its architectural details are integrated with those of surrounding buildings.

9.3 Universal Design of Parking

All parking areas must be designed so that they are convenient and safe for everyone who uses them, regardless of their level of mobility.

- Provide parking spaces for people with disabilities near all uses on a site, in accordance with local regulations. Meet or exceed the standards of the *Americans with Disabilities Act Accessibility Guidelines* (ADAAG), shown in Table 9-1.
- On pedestrian paths, use materials with a flat, smooth surface, and provide low-slope ramps rather than steps wherever possible.

Curb ramps in Chula Vista provide access to sidewalks for all users.

Table 9-1 **ADAAG Standards for Accessible Parking Spaces**

Total Parking Spaces	Minimum Accessible Spaces
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1,000	2 percent of total
1,001 and over	20, plus 1 for each 100 over 1,000

9.4 Bicycle Parking

See Also
Regional Bicycle Plan

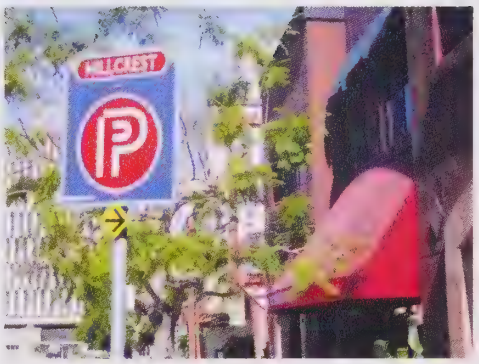
Bicyclists require safe, secure places to park their bikes, just as drivers require space for their cars.

- Locate bicycle parking areas near building entrances, and provide a clear pedestrian path between the parking area and the entrance.
- Include bicycle parking in all parking lots and parking structures.
- Provide secure bicycle parking in limited-access garages or storage areas where practical.
- Provide durable, permanently-anchored bicycle racks that allow bikes to be secured with U-locks or cable locks. Use racks that can support the frame at two points, such as inverted U racks.
- In large bicycle parking areas, include spaces that are long enough to accommodate a bicycle that is towing a trailer.

This rack in San Diego provides secure parking for bicycles.

9.5 Parking Demand Management

Most parking regulations seek to ensure that people who want to visit a site are not turned away by a lack of parking, and do not spill over onto other streets or parking lots. Traditional parking requirements typically meet these goals by requiring an excessive number of vehicle parking spaces for each land use. However, when the demand for parking is carefully managed, the amount of parking can be reduced, potentially by 25 percent or more, while still meeting the needs of drivers.



Signage in San Diego directs drivers to public shared parking lots.

9.5.1 Unbundled Parking Costs and Cash-Out Programs

The costs of parking are often bundled into the rent or purchase price for residential and commercial units and buildings, which requires everyone to bear the costs of parking whether they need it or not. In contrast, when parking costs are "unbundled," or separated, from other costs, the only people who must pay for parking are the ones who actually need it. For example, San Francisco's Central Waterfront Plan requires the cost of parking to be unbundled from the sale prices and rental fees for residential units.

Employers can offer a similar benefit to their employees by providing a cash-out program, so employees can choose between employer-subsidized parking or a cash payment. Some employers combine this benefit with subsidies for carpooling or public transit costs.

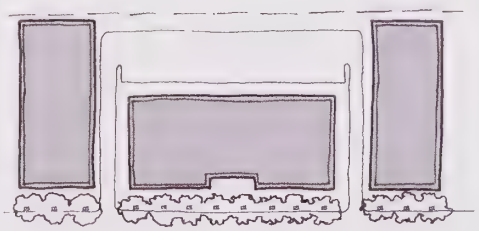
These strategies can create an incentive to carpool or use alternative modes of transportation, which may be less expensive than paying the true cost of parking. For example, one study of employers in the Los Angeles region found that parking cash-out programs could reduce solo driving by 17 percent on average. As a result, these strategies may support reductions in parking requirements.

- Separate the payment of parking costs from rent payments or purchase prices, and allow tenants and owners to pay only for the parking they use.
- Offer a parking cash-out program that allows employees to receive either owner-subsidized free parking or a cash payment equal to the value of the parking subsidy.

9.5.2 Shared Parking

Many jurisdictions allow parking requirements to be reduced when shared parking is provided. Developers can take advantage of these parking reductions to free up land for other uses.

- Establish shared parking agreements with other developers and landowners, as well as agencies that control public parking facilities.
- Display signs and maps to provide information about the location and availability of shared parking facilities.



A shared parking lot provides parking for several businesses.

An on-street sign in San Jose, California, indicates where spaces are available at nearby parking garages.

9.5.3 Demand Management Technologies

Real-time signs can distribute parking demand between different locations by telling drivers where they can find a parking space. In addition, technology can be used to accommodate sophisticated pricing strategies to manage demand. In the years to come, additional new technologies are likely to create new ways for parking spaces to be used more efficiently.

- Display real-time information at parking structures about how many spaces are available.
- Place electronic signs on the street pointing drivers to parking areas with available spaces.
- Use pay stations that provide options for variable pricing and multiple payment methods.

9.5.4 Vehicles that Reduce Demand

Car-sharing programs allow a large group of people to rent vehicles for a brief period, typically just a few hours at a time. By reducing car ownership, these vehicles help to reduce the overall demand for vehicle parking. In addition, vanpools reduce parking demand by transporting many workers in a single vehicle.

- Set aside conveniently located parking spaces for car-sharing pods. Ensure that they are accessible to all members of the car-sharing service.
- Use car-sharing vehicles as an alternative to a corporate vehicle fleet.
- Provide parking spaces for vanpool vehicles at major employment sites.
- Consider providing special parking spaces for vehicles that take up less space than cars, including motorcycles and neighborhood electric vehicles.

Car-sharing vehicles are located near the entrance to this transit station in Berkeley, California.

9.6 Parking Standards and Policies

Planners, urban designers and architects can ensure that vehicle parking is incorporated into new projects as thoughtfully as possible. However, local jurisdictions set the basic requirements for vehicle parking, such as the minimum number of spaces to be provided and the provisions for shared parking between multiple land uses. Cities and counties can use the following guidelines as a starting point to write parking ordinances that support the principles of smart growth.

9.6.1 Minimum and Maximum Requirements

Parking requirements are often drawn from parking generation rates published by the Institute of Transportation Engineers. These rates typically reflect a small number of studies that measure peak parking demand at suburban locations. The maximum parking demand in these studies often becomes the minimum parking standard in local zoning ordinances. As a result, developers are encouraged to provide excessive vehicle parking, and people are encouraged to drive, which is contrary to the principles of smart growth. To support alternatives to the automobile, parking requirements must be more carefully tailored to local needs.

- Reduce minimum parking requirements where appropriate. Allow developers to provide more parking than the minimum, up to a set maximum, if they believe that it is needed.
- Reduce or eliminate parking requirements where there are shared parking areas that can accommodate peak parking demand.
- Set more stringent maximum parking standards in areas where public transit is well established, frequent and convenient.
- Allow on-street parking spaces that are adjacent to a business to be counted towards that business' parking requirement.
- Allow for reduced parking requirements if a project includes transportation demand management (TDM) strategies, such as providing on-site car-sharing vehicles, van pool parking and discounted transit passes.
- Accommodate parking strategies that can make more efficient use of limited space, such as valet parking.
- Allow projects to reserve landscaped areas for future use as surface parking lots, if warranted by demand. Ensure that the project's landscaping requirements will still be met if the landscaped area is replaced by a surface parking lot.
- Amend off-street parking ordinances to include a requirement for numerically and functionally sufficient bicycle parking. For places of employment, consider requiring bike lockers, indoor bike parking or another secure form of bike parking.

- In beach communities and other destinations that have seasonal peaks of visitors, consider using public parking lots and garages, parking management districts and similar tools to meet temporary seasonal demand for parking. Avoid setting the minimum parking requirements based on peak demand.
- Within a jurisdiction's coastal zone, ensure that adequate public parking is available to provide the public with access to coastal resources.

9.6.2 Parking Management Districts

Local jurisdictions can create parking management districts in which the amount and cost of parking is regulated, so that the area meets its parking needs while promoting transit use, ridesharing and other alternatives to the single-occupancy vehicle.

- Provide publicly-owned, centralized parking facilities by collecting impact fees, in-lieu fees and other assessments from developers.
- Manage the price of on-street parking so that no more than 85 percent of visible spaces are occupied at a given time. This ensures that drivers who are willing to pay for a convenient, on-street parking space can find one as quickly as possible, rather than increasing congestion as they search for a space.
- Increase parking fees at times of day when parking demand is highest.
- Provide discounted parking rates in locations that are less convenient.
- Use parking technologies that provide drivers with several convenient options for payment, potentially including credit cards and cell phones.
- Use revenues from parking fees to finance streetscape improvements, enhanced transit and day-to-day maintenance.
- Establish district-wide parking caps in places with frequent transit service.

Shared parking conveniently located behind retail buildings in Berkeley, California, encourages people to link trips.

9.6.3 Shared Parking Regulations

Different land uses often experience peak parking demand at different times of the day or week. In addition, businesses are often located so close to one another that people can park once and walk between them. As a result, many jurisdictions allow multiple land uses to provide shared parking areas, which reduces the total amount of parking that must be provided.

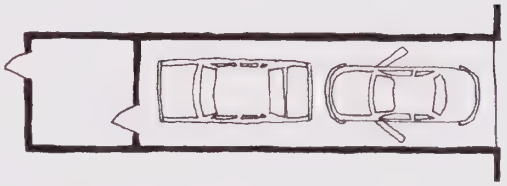
If a parking lot is shared between two separately-owned properties, it is essential for both property owners to sign a legally binding agreement that guarantees access to the parking spaces. The local jurisdiction should have the power to enforce this agreement. Most cities and counties that allow shared parking, such as the City of San Diego, have developed model agreements that must be signed by the property owners and recorded against the property.

- Reduce the total parking requirement for multiple land uses that might be visited in a single trip, or that experience peak demand at different times of the day. Ensure that the typical parking duration and turnover rates of each use are compatible as well.
- Do not provide reserved parking spaces for a single business.
- Allow parking facilities to be located on separate sites from the land uses they serve.
- Set a maximum distance between an off-site parking facility and the land uses that it serves. Typical distances would be 400 to 600 feet for visitor parking and 600 to 1,000 feet for employee parking.
- If a parking lot has a different property owner than the businesses that use the parking lot, require a legally binding agreement between the property owners. Ensure that there is a mechanism to enforce this agreement.

9.6.4 Parking Configuration

Developers can often make more efficient use of a site when they have flexibility to configure vehicle parking spaces in nontraditional ways.

- For residential uses, allow tandem parking spaces, where one car parks behind another, or stacked parking, where two or three cars park above one another on a hydraulic lift.
- Allow large commercial and institutional uses to meet their peak parking demand by temporarily converting regular parking areas to higher-capacity valet parking areas.



Tandem parking spaces allow for flexibility in a project's design.

CHAPTER 10
SMART GROWTH SCORECARD

The Smart Growth Scorecard is a tool to help local jurisdictions and community organizations determine whether a project incorporates the most fundamental design issues that are addressed in *Designing for Smart Growth*. The Scorecard also provides a straightforward way to compare different projects with one another.

About the Scorecard

The Smart Growth Scorecard includes a set of 14 questions about land use, proximity to transit, accessibility, design and aesthetics, as well as other important characteristics. Each of these questions includes evaluation criteria based on three different types of development projects and public improvements:

- **Buildings.** Includes development projects that involve only one or two buildings, or sites that are too small for major public improvements.
- **Large Developments.** Includes development projects that involve several different buildings, or a site that is large enough to accommodate new roads, parks or other major public improvements.
- **Streetscapes.** Includes projects that take place entirely within the public realm, including streets, sidewalks, parks and civic space.

Some questions apply to all types of projects, while other questions apply only to one or two types of projects. The Scorecard applies to all of SANDAG's Smart Growth Place Types, although some questions are especially relevant to Place Types that allow for intensive development.

The criteria in the Scorecard were designed to be appropriate and achievable in 2009, when the Scorecard was originally developed. In the future, as State and local requirements become more demanding, some jurisdictions may wish to revise the Scorecard's criteria so that they are more strict. This is especially true of the criteria for water conservation, energy efficiency and other measures that relate to sustainability. Jurisdictions may also revise or add to the Scorecard's criteria based on their own local practices and goals for new development.

Using the Scorecard

Using the Scorecard is easy. Simply read each question and review the evaluation criteria for that question. Choose the criteria that best correspond to the project. Then tally up the points awarded for each question, divided by the total number of points possible, to calculate the project's final score.

Some questions may not apply to certain projects. For example, the issue of historic buildings or natural features, which is evaluated in question #5, does not apply to some urban infill sites. Similarly, while question #12 evaluates whether a project provides a plaza or public seating, some projects may not do this for legitimate reasons, such as the project's size or its adjacency to existing public space. Therefore, a "Not Applicable" option is provided for each question.

The Scorecard makes it possible to assign a different weight to the scoring for each question. Individual jurisdictions could choose to give some questions more or less weight than others, to reflect the community's goals and priorities for future development. They could also weight each question equally.

1. Mixed Land Uses

For More Information
Chapter 1: Introduction
Chapter 2: Designing for the Region

When considering the mix of land uses, refer to this list:

- Small-lot single-family detached housing (at least 10 units/acre)
- Single-family rowhouses
- Condominiums
- Rental units
- Grocery stores
- Neighborhood shopping and services
- Restaurant/entertainment
- Office/employment
- Recreational/community facility
- Park/playing fields
- School/day care
- Religious, civic or other institutional uses

Does the project contribute to a diverse mix of well-integrated land uses?

☐	**1 Point**	**For Buildings:**	The project provides a single use that is already prevalent in the surrounding neighborhood (within a comfortable ½-mile walk of the project).
		For Large Developments:	The project provides a single use that is already prevalent in the surrounding neighborhood.
☐	**2 Points**	**For Buildings:**	The project provides a single use that is not prevalent in the surrounding neighborhood (within a comfortable ½-mile walk of the project).
		For Large Developments:	The project provides at least two uses that are not already prevalent in the surrounding neighborhood.
☐	**3 Points**	**For Buildings:**	The project provides a single use that is not prevalent in the surrounding neighborhood (within a comfortable ¼-mile walk of the project).
		For Large Developments:	The project provides at least four uses that are not already prevalent in the surrounding neighborhood.
☐	**4 Points**	**For Buildings:**	The project provides two or more uses that are not prevalent in the surrounding neighborhood (within a comfortable ¼-mile walk of the project).
		For Large Developments:	The project provides five or more uses that are not already prevalent in the surrounding neighborhood.
☐	**Not Applicable**	**For Buildings and Large Developments:**	This issue is not relevant to the project under consideration.
		For Streetscapes:	This issue does not apply to streetscapes.

____ **Scoring Weight**

Choose a weight that reflects the importance of this issue to the community, or use the default weight of 1.
Use the same weight for all projects.

____ **Total Score** (Points × Scoring Weight)

____ **Total Possible** (4 × Scoring Weight, or 0 if Not Applicable)

2. Everyday Destinations

For More Information
Chapter 1: Introduction
Chapter 2: Designing for the Region

Everyday destinations include the following:

- Housing
- Grocery stores
- Neighborhood shopping and services
- Restaurant/entertainment
- Office/employment
- Recreational
- School/day care
- Religious, civic or other institutional uses

Is the proposed project near everyday destinations, such as grocery stores, restaurants and schools?

☐	**1 Point**	**For Buildings and Large Developments:**	No everyday destinations are within a comfortable ½-mile walk of the majority of the project, or there are physical barriers, such as a freeway, that effectively prevent pedestrian and bicycle access.
		For Streetscapes:	The project is not located within a comfortable ½-mile walk of everyday destinations. The project does not facilitate increased pedestrian and bicycle access to everyday destinations.
☐	**2 Points**	**For Buildings and Large Developments:**	One or two everyday destinations are within a comfortable ½-mile walk of the majority of the project and are accessible to pedestrians and bicyclists.
		For Streetscapes:	The project facilitates increased pedestrian and bicycle access to one to two everyday destinations within a comfortable ½-mile walk of the project.
☐	**3 Points**	**For Buildings and Large Developments:**	Three or more everyday destinations are within a comfortable ½-mile walk of the majority of the project and are accessible to pedestrians and bicyclists.
		For Streetscapes:	The project facilitates increased pedestrian and bicycle access to three or more everyday destinations within a comfortable ½-mile walk of the project.
☐	**4 Points**	**For Buildings and Large Developments:**	Three or more everyday destinations are within a comfortable ¼-mile walk of the majority of the project and are accessible to pedestrians and bicyclists.
		For Streetscapes:	The project facilitates increased pedestrian and bicycle access to three or more everyday destinations within a comfortable ¼-mile walk of the project.
☐	**Not Applicable**	**For Buildings, Large Developments and Streetscapes:**	This issue is not relevant to the project under consideration.

____ **Scoring Weight**

Choose a weight that reflects the importance of this issue to the community, or use the default weight of 1.
Use the same weight for all projects.

____ **Total Score** (Points × Scoring Weight)

____ **Total Possible** (4 × Scoring Weight, or 0 if Not Applicable)

3. Consistent Street Edge

For More Information
Chapter 3: Site Design

Does the project establish a consistent built edge on the street to facilitate pedestrian use?

☐	**1 Point**	**For Buildings:**	Buildings are not oriented toward the street and provide no clear pedestrian connection to the street. If existing development typically follows a build-to line, new buildings are not built to this line; if existing development has minimal setbacks, new buildings have much larger setbacks. Frontages are dominated by parking or vehicle entrances. Multiple curb cuts for vehicle entrances occur within 200 feet of one another.
		For Large Developments:	Buildings are not oriented toward the street and provide no clear pedestrian connection to the street. Buildings on the same street create an inconsistent or poorly-defined street edge. Frontages are dominated by parking or vehicle entrances. Multiple curb cuts for vehicle entrances occur within 200 feet of one another.
☐	**2 Points**	**For Buildings:**	Buildings are oriented toward the street or provide a clear pedestrian connection to the street. Buildings adhere to existing setback/build-to lines. Most vehicle entrances, parking lots and loading docks are located behind buildings.
		For Large Developments:	Buildings are oriented toward the street or provide a clear pedestrian connection to the street. The project maintains a consistent or an appropriately varied street edge for all buildings on the same street. Most vehicle entrances, parking lots and loading docks are located behind buildings.
☐	**3 Points**	**For Buildings:**	Buildings are oriented toward the street. Buildings maintain or define setback/build-to lines that are close to or adjacent to the sidewalk. Vehicle entrances, parking lots and loading docks are located behind buildings, and curb cuts for vehicle entrances are held to a minimum.
		For Large Developments:	Buildings are oriented toward the street. The project maintains a consistent or an appropriately varied street edge for all buildings on the same street. Vehicle entrances, parking lots and loading docks are located behind buildings, and curb cuts for vehicle entrances are held to a minimum.
☐	**4 Points**	**For Buildings:**	Buildings are oriented toward the street, and building frontages are designed to clearly show where people can enter. Buildings maintain or define setback/build-to lines that are close to or adjacent to the sidewalk. Where buildings step back from this line, attractive landscaping is provided. All vehicle entrances are located behind or on the sides of buildings.
		For Large Developments:	Buildings are oriented toward the street. The project maintains a consistent or an appropriately varied street edge for all buildings on the same street. Building heights are defined so that the average height of buildings is at least 50 percent of the street's total width, measured as the distance between building façades. Vehicle entrances, parking lots and loading docks are located behind buildings, and there is no more than 1 curb cut per block face for vehicle entrances (not including alleys).
☐	**Not Applicable**	**For Buildings and Large Developments:**	This issue is not relevant to the project under consideration.
		For Streetscapes:	This issue does not apply to streetscapes.

____ **Scoring Weight**

Choose a weight that reflects the importance of this issue to the community, or use the default weight of 1.
Use the same weight for all projects.

____ **Total Score** (Points × Scoring Weight)

____ **Total Possible** (4 × Scoring Weight, or 0 if Not Applicable)

4. Street Frontages

For More Information
Chapter 4: Building Design

Do the proposed buildings present visually interesting street frontages?

☐	**1 Point**	**For Buildings and Large Developments:**	The project presents a blank wall on street-facing façades. Building frontages are visually monotonous and are dominated by opaque materials. There are minimal views from the street into the building.
☐	**2 Points**	**For Buildings and Large Developments:**	The façades of large buildings with long street frontages are broken into smaller, distinct modules. Transparent window openings are provided at street level.
☐	**3 Points**	**For Buildings and Large Developments:**	Building façades include details and ornamentation that add visual relief and are appropriate to the building's architectural style. Durable, high-quality materials are used to enrich façades. The façades of large buildings with long street frontages are broken into smaller, distinct modules. Transparent window openings are provided at street level.
☐	**4 Points**	**For Buildings and Large Developments:**	Building entrances and frontages provide awnings, canopies or arcades that offer shade and weather protection for pedestrians. Building façades include details and ornamentation that add visual relief and are appropriate to the architectural style. Durable, high-quality materials are used to enrich façades. The façades of large buildings with long street frontages are broken into smaller, distinct modules. Transparent window openings are provided at street level. Some ground-floor frontages are designed to allow for outdoor seating for restaurants and cafés.
☐	**Not Applicable**	**For Buildings and Large Developments:**	This issue is not relevant to the project under consideration.
		For Streetscapes:	This issue does not apply to streetscapes.

____ **Scoring Weight**

Choose a weight that reflects the importance of this issue to the community, or use the default weight of 1. Use the same weight for all projects.

____ **Total Score** (Points × Scoring Weight)

____ **Total Possible** (4 × Scoring Weight, or 0 if Not Applicable)

5. Historic and Natural Features

For More Information
Chapter 3: Site Design
Chapter 4: Building Design
Chapter 8: Parks and Civic Space

Does the project respect the site's original topography, natural features and existing buildings?

☐	**1 Point**	**For Buildings and Large Developments:**	Historic and/or usable buildings are demolished. New landscaping, grading or paving eliminates existing natural features, including mature trees. Significant grading is used to create large, flat pads for new buildings.
☐	**2 Points**	**For Buildings and Large Developments:**	Some existing, usable buildings are rehabilitated and reused. Some existing natural features are preserved, including some mature trees. The project creates a minimal number of flat pads for new buildings.
☐	**3 Points**	**For Buildings and Large Developments:**	Most existing, usable buildings are rehabilitated and reused, and historic buildings are at least partially restored. Some existing natural features, including most mature trees, are preserved and highlighted as public amenities. Most of the site's finished topography retains the appearance of natural contours.
☐	**4 Points**	**For Buildings and Large Developments:**	The project significantly rehabilitates and improves existing buildings, extending their usable life. Historic buildings are fully restored. The project restores natural features to the landscape—for example, by daylighting a creek or reconstructing a portion of a wetland. Nearly all mature trees are preserved. All of the site's finished topography retains the appearance of natural contours.
☐	**Not Applicable**	**For Buildings and Large Developments:**	This issue is not relevant to the project under consideration.
		For Streetscapes:	This issue does not apply to streetscapes.

_____ **Scoring Weight**

Choose a weight that reflects the importance of this issue to the community, or use the default weight of 1.
Use the same weight for all projects.

_____ **Total Score** (Points × Scoring Weight)

_____ **Total Possible** (4 × Scoring Weight, or 0 if Not Applicable)

6. Sustainable Design

For More Information
Chapter 3: Site Design
Chapter 4: Building Design
Chapter 5: Multimodal Streets

Does the project use sustainable design solutions for its construction and operation?

☐	**1 Point**	**For Buildings and Large Developments:**	The project does not take special measures to reduce energy and water use. Little or none of the project's construction waste is reused or recycled. Landscaping in the project is not designed to minimize the use of water.
		For Streetscapes:	Little or none of the project's construction waste is recycled. Landscaping in the project is not designed to minimize the use of water.
☐	**2 Points**	**For Buildings and Large Developments:**	Buildings are designed to take advantage of the local climate, with some of the buildings in the development containing at least one significant green building feature such as solar panels, passive heating or cooling systems, green roofs or greywater reuse. At least 50 percent of construction waste is reused or recycled. Some landscaping elements in the project are designed to minimize the use of water.
		For Streetscapes:	The project incorporates street trees and landscaping that are appropriate to the local climate and are designed to maximize the efficiency of water use. Some construction waste is recycled.
☐	**3 Points**	**For Buildings and Large Developments:**	Buildings in the project are considered "green" buildings under a certification system such as the LEED Green Building Rating System or Build it Green's GreenPoint Rated. At least 70 percent of construction waste is reused or recycled. All of the project's landscaping is designed to minimize the use of water. At least 5 percent of the materials used in the project are salvaged, refurbished or reused. Buildings are oriented to the sun to provide natural daylighting. Trees and shade structures provide shade for buildings and paved areas.
		For Streetscapes:	The project incorporates street trees and landscaping that provide shade, are appropriate to the local climate and are designed to maximize the efficiency of water use. Much of the project's construction waste is reused or recycled.
☐	**4 Points**	**For Buildings and Large Developments:**	Buildings in the project achieve the highest level of recognition from a green building certification system. At least 90 percent of construction waste is reused or recycled. All of the project's landscaping is designed to minimize the use of water. At least 10 percent of the materials used in the project are salvaged, refurbished or reused. Buildings are oriented to the sun to provide natural daylighting. Trees and shade structures provide shade for buildings and paved areas.
		For Streetscapes:	The project incorporates street trees and landscaping that provide shade, are appropriate to the local climate and are designed to maximize the efficiency of water use. It incorporates methods for naturally detaining and filtering stormwater runoff, such as swales or rain gardens. Permeable surfaces are used wherever possible. In addition, the project incorporates recycled, reused or sustainable materials. Nearly all construction waste is reused or recycled.
☐	**Not Applicable**	**For Buildings, Large Developments and Streetscapes:**	This issue is not relevant to the project under consideration.

____ **Scoring Weight**

Choose a weight that reflects the importance of this issue to the community, or use the default weight of 1.
Use the same weight for all projects.

____ **Total Score** (Points × Scoring Weight)

____ **Total Possible** (4 × Scoring Weight, or 0 if Not Applicable)

7. Universal Access

For More Information
Chapter 3: Site Design
Chapter 4: Building Design
Chapter 5: Multimodal Streets

Does the project provide access for all people, regardless of their level of mobility?

☐	**1 Point**	**For Buildings, Large Developments and Streetscapes:**	The project meets the minimum standards of the Americans with Disabilities Act (ADA) and State law for providing access to people with disabilities.
☐	**2 Points**	**For Buildings, Large Developments and Streetscapes:**	The project exceeds some requirements for accessibility—for example, by providing separate access ramps that are wider than required.
☐	**3 Points**	**For Buildings and Large Developments:**	The project exceeds accessibility requirements and incorporates some elements of universal design, such as stepless paths and accessible features that are not specifically marked but make the project accessible to all. Parking spaces for people with disabilities are located as close as possible to accessible building entrances.
		For Streetscapes:	The project exceeds accessibility requirements and incorporates some elements of universal design, such as stepless paths and accessible features that are not specifically marked but make the project accessible to all.
☐	**4 Points**	**For Buildings and Large Developments:**	The project fully adheres to the principles of universal design, providing access for people of all levels of mobility throughout the site and building. Parking spaces for people with disabilities are located as close as possible to accessible building entrances.
		For Streetscapes:	The project incorporates universally accessible paths of travel along with special accessibility features such as beeping crosswalks, Braille signage, handrails where necessary, ample sidewalk widths and bus shelters that offer protection from the elements for wheelchair users. On-street parking spaces for people with disabilities are provided in locations where off-street spaces are not available.
☐	**Not Applicable**	**For Buildings, Large Developments and Streetscapes:**	This issue is not relevant to the project under consideration.

____ **Scoring Weight**

Choose a weight that reflects the importance of this issue to the community, or use the default weight of 1. Use the same weight for all projects.

____ **Total Score** (Points × Scoring Weight)

____ **Total Possible** (4 × Scoring Weight, or 0 if Not Applicable)

8. Street Connectivity

For More Information
Chapter 5: Multimodal Streets
Regional Bicycle Plan

Does the project improve street connectivity for vehicles, bicyclists and pedestrians?

☐	**1 Point**	**For Large Developments:**	Only one or two arterial roads connect the project to surrounding areas. Within the project, most internal circulation is channeled onto one or two collector roads. Many streets do not include bicycle facilities or traffic calming measures that would facilitate use by pedestrians and bicyclists.
		For Streetscapes:	The project does not address existing deficiencies in the street's pedestrian and bicycle facilities.
☐	**2 Points**	**For Large Developments:**	The project connects some adjacent roads to its internal street network. Parts of the internal street network are connected to one another, with streets spaced no more than 500 feet apart on average. Most streets within the project are designed for vehicle speeds of 25 miles per hour or less, and every street is designed to accommodate pedestrians.
		For Streetscapes:	The project improves the street so that it better accommodates pedestrians or bicyclists.
☐	**3 Points**	**For Large Developments:**	The project connects most adjacent roads to its internal street network. Most parts of the internal street network are a highly connected grid, with streets spaced no more than 400 feet apart on average. All streets within the project are designed for vehicle speeds of 25 miles per hour or less, and every street is designed to accommodate pedestrians. The project includes striped bicycle lanes on all major streets or a separate bicycle path serving the same destinations.
		For Streetscapes:	The project improves the street so that it provides a safe, comfortable route for pedestrians as well as bicyclists, and so that on-street bicycle parking is provided.
☐	**4 Points**	**For Large Developments:**	The project connects all adjacent roads to its internal street network. The project also provides for future connections with adjacent properties. The internal street network is a highly connected grid, with streets spaced no more than 350 feet apart on average. Major thoroughfares are closely spaced so that each one requires fewer lanes. All streets within the project are designed for vehicle speeds of 25 miles per hour or less, and every street is designed to accommodate pedestrians. The project includes striped bicycle lanes on all major streets or a separate bicycle path serving the same destinations.
		For Streetscapes:	The project emphasizes improvements that benefit pedestrians and bicyclists. Traffic lanes are narrowed or removed to provide space for striped bicycle lanes or wider sidewalks. On-street bicycle parking is provided in many locations along the street.
☐	**Not Applicable**	**For Buildings:**	This issue does not apply to buildings.
		For Large Developments and Streetscapes:	This issue is not relevant to the project under consideration.

____ **Scoring Weight**

Choose a weight that reflects the importance of this issue to the community, or use the default weight of 1.
Use the same weight for all projects.

____ **Total Score** (Points × Scoring Weight)

____ **Total Possible** (4 × Scoring Weight, or 0 if Not Applicable)

9. Pedestrian Realm

For More Information
Chapter 5: Multimodal Streets
Planning and Designing for Pedestrians

Does the project provide adequate sidewalks, pedestrian-friendly streetscapes and a safe environment for pedestrians?

☐	**1 Point**	**For Large Developments and Streetscapes:**	Few or no sidewalks are provided in the project.
☐	**2 Points**	**For Large Developments and Streetscapes:**	Every street in the project has a sidewalk on both sides, with a width of at least 5 feet for an unobstructed throughway zone and a planted area between the throughway zone and curb on major streets. The project improves the streetscape by providing some street trees or a landscaped center median.
☐	**3 Points**	**For Large Developments and Streetscapes:**	Every street in the project has a sidewalk on both sides, with a width of at least 10 feet on major streets. The throughway zone has a smooth surface and is free of obstructions. Pedestrian safety is improved by providing high-visibility crosswalks with curb bulbouts to reduce crossing distances. In addition, sidewalks are well lit at night. Pedestrian-activated signals include buttons that can be used by people with disabilities. Closely spaced street trees with a broad, leafy canopy provide shade for pedestrians on all streets.
☐	**4 Points**	**For Large Developments and Streetscapes:**	Pedestrians are treated as a priority in the project. Every street in the project has a sidewalk on both sides, with a width of at least 12 feet on major streets; or, rather than providing sidewalks, some streets are designed so that pedestrians can safely and comfortably share the entire road with slow-moving vehicle traffic. The throughway zone on sidewalks has a smooth surface and is free of obstructions. Sidewalks are well lit at night. Pedestrian-activated signals include buttons that can be used by people with disabilities. Closely spaced street trees with a broad, leafy canopy provide shade for pedestrians on all streets. Additional pedestrian safety measures are included in the project, such as refuge islands in the street median at crosswalks. Attractive, pedestrian-oriented street furniture, such as benches and trash cans, is also provided.
☐	**Not Applicable**	**For Buildings:** **For Large Developments and Streetscapes:**	This issue does not apply to buildings. This issue is not relevant to the project under consideration.

____ **Scoring Weight**

Choose a weight that reflects the importance of this issue to the community, or use the default weight of 1. Use the same weight for all projects.

____ **Total Score** (Points × Scoring Weight)

____ **Total Possible** (4 × Scoring Weight, or 0 if Not Applicable)

10. Transit Access

For More Information
Chapter 5: Multimodal Streets
Chapter 6: Transit Stations

Will the project contribute to increased use of existing or planned public transit?

☐	**1 Point**	**For Buildings and Large Developments:**	There is no nearby public transit service, or headways between buses or trains on the same route are longer than 30 minutes.
		For Streetscapes:	The project does not include any improvements that would encourage increased use of public transit.
☐	**2 Points**	**For Buildings:**	The project is within a comfortable ¼-mile walk of a transit corridor, or a transit stop that serves at least two different routes, with headways no longer than 30 minutes between buses or trains on the same route.
		For Large Developments:	Most of the project is within a comfortable ¼-mile walk of a transit corridor, or a transit stop that serves at least two different routes, with headways no longer than 30 minutes between buses or trains on the same route. Transit stops include at least one passenger amenity such as benches, passenger shelters or posted timetables.
		For Streetscapes:	The project adds at least one new amenity at transit stops, such as benches, passenger shelters or posted timetables.
☐	**3 Points**	**For Buildings:**	The project is within a comfortable ¼-mile walk of a transit corridor, or a transit stop that serves at least two different routes, with headways no longer than 15 minutes between buses or trains on the same route.
		For Large Developments:	Nearly all of the project is within a comfortable ¼-mile walk of a transit corridor, or a transit stop that serves at least two different routes, with headways no longer than 15 minutes between buses or trains on the same route. Transit stops include multiple passenger amenities such as benches, passenger shelters or posted timetables.
		For Streetscapes:	The project adds multiple passenger amenities at transit stops, such as benches, passenger shelters or posted timetables.
☐	**4 Points**	**For Buildings:**	The project is within a comfortable ¼-mile walk of a transit corridor, or a transit stop that serves at least two different routes, with headways no longer than 10 minutes between buses or trains on the same route.
		For Large Developments:	Nearly all of the project is within a comfortable ¼-mile walk of a transit corridor, or a transit stop that serves at least two different routes, with headways no longer than 10 minutes between buses or trains on the same route. The project adds exceptionally high-quality passenger amenities at transit stops, such as artist-designed benches or real-time displays of expected arrival times. Features such as bus bulbouts are included to improve the efficiency of transit service.
		For Streetscapes:	The project adds exceptionally high-quality passenger amenities at transit stops, such as artist-designed benches or real-time displays of expected arrival times. Features such as bus bulbouts and queue jump lanes are included to improve the efficiency of transit service.
☐	**Not Applicable**	**For Buildings, Large Developments and Streetscapes:**	This issue is not relevant to the project under consideration.

____ **Scoring Weight**

Choose a weight that reflects the importance of this issue to the community, or use the default weight of 1.
Use the same weight for all projects.

____ **Total Score** (Points × Scoring Weight)

____ **Total Possible** (4 × Scoring Weight, or 0 if Not Applicable)

11. Access to Public and Civic Space

For More Information
Chapter 7: Civic Buildings
Chapter 8: Parks and Civic Space

Does the project provide easy pedestrian and bicycle access to parks and civic buildings?

☐	**1 Point**	**For Buildings and Large Developments:**	Some parts of the project are located more than 1 mile from a park or civic building.
		For Streetscapes:	The project does not take any steps to improve pedestrian or bicycle access to parks or civic buildings.
☐	**2 Points**	**For Buildings and Large Developments:**	All parts of the project are within a comfortable 1-mile walk to a park, or a civic building such as a library or school.
		For Streetscapes:	The project includes some pedestrian and bicycle improvements to at least 1,000 linear feet of a street that is adjacent to a park or civic building.
☐	**3 Points**	**For Buildings and Large Developments:**	All parts of the project are within a comfortable ½-mile walk to a park, as well as a civic building such as a library or school.
		For Streetscapes:	The project includes significant pedestrian and bicycle improvements to at least 1,500 linear feet of a street that is adjacent to a park or civic building.
☐	**4 Points**	**For Buildings and Large Developments:**	All parts of the project are within a comfortable ¼-mile walk to a park, or a ½-mile walk to multiple parks. In addition, all parts of the project are within a comfortable ½-mile walk to a civic building such as a library or school.
		For Streetscapes:	The project includes major pedestrian and bicycle improvements to at least 2,000 linear feet of a street that is adjacent to a park or civic building. Any significant obstacles to pedestrian connectivity, such as dead-end streets, are mitigated by providing new off-street pedestrian and bicycle paths.
☐	**Not Applicable**	**For Buildings, Large Developments and Streetscapes:**	This issue is not relevant to the project under consideration.

____ **Scoring Weight**

Choose a weight that reflects the importance of this issue to the community, or use the default weight of 1.
Use the same weight for all projects.

____ **Total Score** (Points × Scoring Weight)

____ **Total Possible** (4 × Scoring Weight, or 0 if Not Applicable)

12. Plazas and Seating

For More Information
Chapter 3: Site Planning
Chapter 8: Parks and Civic Space

Will the project create plazas, seating areas or other spaces that are available for public use?

☐	**1 Point**	**For Buildings, Large Developments and Streetscapes:**	The project does not create new plazas, seating areas or other spaces that are available for public use.
☐	**2 Points**	**For Buildings, Large Developments and Streetscapes:**	The project creates at least one public plaza or seating area that adequately meets the needs of its expected users.
☐	**3 Points**	**For Buildings, Large Developments and Streetscapes:**	The project creates at least one public plaza or seating area that includes special design features such as public art, high-quality furniture and attractive paving. Lighting illuminates pathways and seating areas.
☐	**4 Points**	**For Buildings, Large Developments and Streetscapes:**	The project creates at least one public plaza or seating area that includes special design features such as public art, high-quality furniture and attractive paving. The plaza is carefully integrated with the buildings that surround it. If it is adjacent to a public street, it is oriented towards the sidewalk and includes clear physical connections to the sidewalk. Lighting illuminates pathways and seating areas.
☐	**Not Applicable**	**For Buildings, Large Developments and Streetscapes:**	This issue is not relevant to the project under consideration.

_____ **Scoring Weight**

Choose a weight that reflects the importance of this issue to the community, or use the default weight of 1.
Use the same weight for all projects.

_____ **Total Score** (Points × Scoring Weight)

_____ **Total Possible** (4 × Scoring Weight, or 0 if Not Applicable)

13. Vehicle and Bicycle Parking

For More Information
Chapter 3: Site Planning
Chapter 9: Parking

Is parking designed and located to maintain safe, pedestrian-friendly streets and to meet the needs of bicyclists?

☐ **1 Point**

For Buildings and Large Developments: The project's off-street vehicle parking is designed in a way that does not support the pedestrian realm. Surface parking is provided in front of buildings, and there is no landscaping buffer on street-facing edges of surface parking lots. Numerous driveways create gaps in the sidewalk. Little or no bicycle parking is provided.

For Streetscapes: No on-street vehicle or bicycle parking is provided.

☐ **2 Points**

For Buildings and Large Developments: Most vehicle parking spaces are located to the side or rear of buildings. Driveways and curb cuts are minimized. A small landscaping buffer is provided on street-facing edges of the parking lot. Bicycle parking is provided, but it is not located near building entrances.

For Streetscapes: On-street vehicle parking creates a buffer between pedestrians and vehicle traffic. Limited on-street bicycle parking is available.

☐ **3 Points**

For Buildings and Large Developments: There are no vehicle parking spaces between the building and the sidewalk, and most parking is located behind buildings. Driveways and curb cuts are minimized, and the sidewalk's paving treatment continues across the driveway. Parking garages are designed to have a façade with human-scale features and horizontal divisions between floors, similar to occupied buildings. If individual garages are provided for residential units, most garages are accessed from an alley. A landscaping buffer provides a variety of plants with different heights and textures on street-facing edges of surface parking lots. Bicycle parking is provided near building entrances, using racks that can support the bicycle's frame at two points.

For Streetscapes: On-street vehicle parking creates a buffer between pedestrians and vehicle traffic. Landscaped bulbouts or other planted areas are incorporated into the on-street parking. On-street bicycle parking is provided near most building entrances, using racks that can support the bicycle's frame at two points.

☐ **4 Points**

For Buildings and Large Developments: Aside from signage and entry driveways, all surface parking lots for vehicles are located behind buildings. Driveways and curb cuts are minimized, and the sidewalk's paving treatment continues across the driveway. Parking garages are designed to have the same appearance as a normal building and are wrapped with retail storefronts, offices or residential units. If individual garages are provided for residential units, all garages are accessed from an alley. A landscaping buffer provides a variety of plants with different heights and textures on street-facing edges of surface parking lots, and an attractive, partially-transparent fence or low wall further defines the edge of the lot. Bicycle parking is provided near building entrances, using racks that can support the frame at two points. Some or all of the bicycle parking spaces are secured in limited-access garages or storage areas.

For Streetscapes: On-street vehicle parking creates a buffer between pedestrians and vehicle traffic. Landscaped bulbouts or other planted areas are incorporated into the on-street parking. An innovative strategy such as back-in angled parking is used to minimize conflicts between different modes of travel. On-street bicycle parking is provided near almost all building entrances, using racks that can support the bicycle's frame at two points.

☐ **Not Applicable**

For Buildings, Large Developments and Streetscapes: This issue is not relevant to the project under consideration.

____ **Scoring Weight**

Choose a weight that reflects the importance of this issue to the community, or use the default weight of 1. Use the same weight for all projects.

____ **Total Score** (Points × Scoring Weight)

____ **Total Possible** (4 × Scoring Weight, or 0 if Not Applicable)

14. Parking Demand Management

For More Information
Chapter 9: Parking

Does the project incorporate strategies to manage parking demand?

☐	**1 Point**	**For Buildings and Large Developments:**	The project does not strive to reduce vehicle parking demand. It may include more vehicle parking spaces than the required minimum. There is no separate charge for parking.
		For Streetscapes:	On-street vehicle parking is free, or its cost is negligible.
☐	**2 Points**	**For Buildings and Large Developments:**	The project includes no more than the minimum required number of vehicle parking spaces.
		For Streetscapes:	On-street vehicle parking is paid, but parking fees do not reflect peak demand pricing strategies, such as charging higher rates during busy times of the day.
☐	**3 Points**	**For Buildings and Large Developments:**	The project includes no more than the minimum required number of vehicle parking spaces, and at least some parking is shared between several uses. Some parking costs are unbundled from purchase prices and lease rates in order to encourage the use of non-automobile modes of transportation.
		For Streetscapes:	On-street vehicle parking is paid. The project incorporates peak demand pricing strategies.
☐	**4 Points**	**For Buildings and Large Developments:**	The project is in a parking district that does not require any on-site vehicle parking, or it is an adaptive reuse of a building that does not include on-site parking. Alternatively, the project includes only the minimum required number of vehicle parking spaces and shares all of its parking between several uses. If there are times of the day or week when none of the on-site parking is needed, these spaces are made available to the public. Space is provided for car-sharing vehicles that are available to all members of the car-sharing service. All parking costs are unbundled from purchase prices and lease rates.
		For Streetscapes:	The project incorporates peak demand pricing strategies. Advanced technology is used to monitor the availability of on-street parking spaces.
☐	**Not Applicable**	**For Buildings, Large Developments and Streetscapes:**	This issue is not relevant to the project under consideration.

____ **Scoring Weight**

Choose a weight that reflects the importance of this issue to the community, or use the default weight of 1.
Use the same weight for all projects.

____ **Total Score** (Points × Scoring Weight)

____ **Total Possible** (4 × Scoring Weight, or 0 if Not Applicable)

Final Project Score

This project has been evaluated using the Smart Growth Scorecard, a flexible tool created by SANDAG to evaluate proposed development projects and streetscape improvements. While the criteria in this Scorecard are based on SANDAG's *Designing for Smart Growth*, your local jurisdiction may have modified the Scorecard to reflect its own priorities for future development.

Project Name: _____

Project Location: _____

Total Score	Total Possible	Question
		1. Does the project contribute to a diverse mix of well-integrated land uses?
		2. Is the proposed project near everyday destinations, such as grocery stores, restaurants and schools?
		3. Does the project establish a consistent built edge on the street to facilitate pedestrian use?
		4. Do the proposed buildings present visually interesting street frontages?
		5. Does the project respect the site's original topography, natural features and existing buildings?
		6. Does the project use sustainable design solutions for its construction and operation?
		7. Does the project provide access for all people, regardless of their level of mobility?
		8. Does the project improve street connectivity for vehicles, bicyclists and pedestrians?
		9. Does the project provide adequate sidewalks, pedestrian-friendly streetscapes and a safe environment for pedestrians?
		10. Will the project contribute to increased use of existing or planned public transit?
		11. Does the project provide easy pedestrian and bicycle access to parks and civic buildings?
		12. Will the project create plazas, seating areas or other spaces that are available for public use?
		13. Is parking designed and located to maintain safe, pedestrian-friendly streets and to meet the needs of bicyclists?
		14. Does the project incorporate strategies to manage parking demand?

	÷		× 100 =		%
Combined Total Score		**Combined Total Possible**		**Final Score**	

References

General References

Alexander, Christopher et al, 1977, *A Pattern Language: Towns, Buildings, Construction*, New York: Oxford University Press.

Anderson, Stanford (editor), 1978, *On Streets*, Cambridge: Massachusetts Institute of Technology Press.

Calthorpe, Peter, 1993, *The Next American Metropolis: Ecology, Community, and the American Dream*, New York: Princeton Architectural Press.

Duany, Andres, Elizabeth Plater-Zyberk and Jeff Speck, 2000, *Suburban Nation: The Rise of Sprawl and the Decline of the American Dream*, New York: North Point Press.

Ewing, Reid, 1996, *Best Development Practices,* Chicago: Planners Press.

Farr, Douglas, 2007, *Sustainable Urbanism: Urban Design with Nature*, Hoboken: J. Wiley & Sons.

Hough, Michael, 2004, *Cities and Natural Process,* New York: Routledge.

Lynch, Kevin, 1981, *Good City Form,* Cambridge: Massachusetts Institute of Technology Press.

Metropolitan Transportation Commission (MTC), 2007, *Station Area Planning Manual*, Oakland, CA: MTC. (http://www.mtc.ca.gov/planning/smart_growth/Station_Area_Planning_Manual_Nov07.pdf)

Pryde, Philip R., 2004, *San Diego: An Introduction to the Region*, San Diego: Sunbelt Publications.

San Diego Association of Governments (SANDAG), 2004, *Regional Comprehensive Plan,* San Diego: SANDAG. (http://www.sandag.org/rcp)

Smart Growth Network, 2002, *Getting to Smart Growth: 100 Policies for Implementation*, Washington, D.C.: Smart Growth Network.

Smart Growth Network, 2003, *Getting to Smart Growth II: 100 More Policies for Implementation*, Washington, D.C.: Smart Growth Network.

Sucher, David, 1995, *City Comforts: How to Build an Urban Village*, Seattle: City Comforts Press.

Site and Building Design

Architectural and Transportation Barriers Compliance Board (Access Board), 1998, *Americans with Disabilities Act : Accessibility Guidelines for Buildings and Facilities (ADAAG)*, Washington, D.C.: Access Board. (http://www.access-board.gov/adaag/ADAAG.pdf)

Brolin, Brent C., 2002, *The Designer's Eye: Visual Problem-Solving in Architecture*, New York: W.W. Norton.

City of Emeryville, 2005, *Stormwater Guidelines for Green, Dense Redevelopment: Stormwater Quality Solutions for the City of Emeryville*, Emeryville, CA: City of Emeryville. (http://www.ci.emeryville.ca.us/planning/pdf/stormwater_guidelines.pdf)

County of San Diego, 2009, *Fire, Defensible Space, and You...*, http://www.sdcounty.ca.gov/dplu/fire_resistant.html, current as of January 2009.

County of San Diego Department of Planning and Land Use, 2007, *Low Impact Development Handbook: Stormwater Management Strategies*, San Diego: County of San Diego Department of Planning and Land Use. (http://www.co.san-diego.ca.us/dplu/docs/LID-Handbook.pdf)

Duany, Andres, Sandy Sorlien and William Wright, 2008, *SmartCode*, Version 9.2, New York: New Urban News Publications.

Federal Emergency Management Agency, 2008, *Create Safety Zones Around Your Home*, http://www.fema.gov/hazard/wildfire/wf_prepare.shtm#2, current as of January 2009.

Hedman, Richard, and Andrew Jaszewski, 1984, *Fundamentals of Urban Design*, Washington, D.C.: Planners Press.

Hinshaw, Mark, 1995, *Design Review*, Planning Advisory Service Report No. 454, Chicago: Planners Press.

Kent, Douglas, 2005, *Firescaping: Creating Fire-Resistant Landscapes, Gardens, and Properties in California's Diverse Environments*, Berkeley: Wilderness Press.

Krier, Rob, 1998, *Architectural Composition*, New York: Rizzoli International Publications.

Parolek, Daniel G., Karen Parolek and Paul C. Crawford, 2008, *Form-Based Codes: A Guide for Planners, Urban Designers, Municipalities and Developers*, Hoboken: J. Wiley & Sons.

Rebman, Jon P., and Michael G. Simpson, 2006, *Checklist of the Vascular Plants of San Diego County*, Fourth Edition, San Diego: SDSU Herbarium Press.

StopWaste.Org, 2008, *Bay-Friendly Scorecard for Civic & Commercial Landscapes*, Oakland: StopWaste.Org. (http://www.stopwaste.org/docs/bflcivic_commercial_landscape_scorecard_final.xls)

United States Environmental Protection Agency (EPA), 2005, *Using Smart Growth Techniques as Stormwater Best Management Practices*, EPA 231-B-05-002, Washington, D.C.: EPA. (http://www.epa.gov/smartgrowth/pdf/sg_stormwater_BMP.pdf)

Zelinka, Al and Dean Brennan, 2001, *SafeScape: Creating Safer, More Livable Communities Through Planning and Design*, Chicago: Planners Press.

Multimodal Streets and Transit Facilities

Alameda-Contra Costa Transit District (AC Transit), 2004, *Designing for Transit*, Oakland, CA: AC Transit.

Augenstein, Chris and Chester Fung (editors), 2003, *Community Design & Transportation: A Manual of Best Practices for Integrating Transportation and Land Use*, San Jose, CA: Santa Clara Valley Transportation Authority.

California Department of Transportation (Caltrans), 2001, "Deputy Directive on Accommodating Non-Motorized Travel," Sacramento: Caltrans. (http://www.dot.ca.gov/hq/oppd/non-motor-travel.pdf)

California Department of Transportation (Caltrans), 2001, "Director's Policy on Context Sensitive Solutions," Sacramento: Caltrans. (http://www.dot.ca.gov/hq/oppd/context-solution.pdf)

California Department of Transportation (Caltrans), 2005, *Main Streets: Flexibility in Design & Operations*, Sacramento: Caltrans. (http://www.dot.ca.gov/hq/oppd/context/mainstreets2005.pdf)

California Department of Transportation (Caltrans), 2008, "Deputy Directive DD-64-R1: Complete Streets – Integrating the Transportation System," Sacramento: Caltrans. (http://www.calbike.org/pdfs/DD-64-R1.pdf)

City of San Diego City Planning and Community Investment Department, 2002, *City of San Diego Street Design Manual*, San Diego: City of San Diego City Planning and Community Investment Department. (http://www.sandiego.gov/planning/documents/pdf/trans/complete.pdf)

Institute of Transportation Engineers, 2006, *Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities,* RP-036, Washington, D.C.: Institute of Transportation Engineers.

Jacobs, Allan B., 1993, *Great Streets*, Cambridge: Massachusetts Institute of Technology Press.

Jacobs, Allan B., Elizabeth Macdonald and Yodan Rofé, 2003, *The Boulevard Book: History, Evolution and Design of Multiway Boulevards*, Cambridge: Massachusetts Institute of Technology Press.

Knapp, Keith, and K. Giese, 2001, *Guidelines for Conversion of Urban Four-Lane Undivided Roadways to Three-Lane Two-Way Left-Turn Lane Facilities*, Ames, IA: Center for Transportation Research and Education, Iowa State University.

Metro, 2002, *Creating Livable Streets: Street Design Guidelines*, Portland: Metro.

Metro, 2002, *Green Streets: Innovative Solutions for Stormwater and Stream Crossings*, Portland: Metro.

Metro, 2002, *Trees for Green Streets: An Illustrated Guide*, Portland: Metro.

Rosales, Jennifer, 2007, *Road Diet Handbook: Setting Trends for Livable Streets*, William Barclay Parsons Fellowship Monograph 20, New York: Parsons Brinckerhoff.

San Diego Association of Governments (SANDAG), 2002, *Planning and Designing for Pedestrians,* San Diego: SANDAG. (http://www.sandag.org/uploads/publicationid/publicationid_713_3269.pdf)

United States Department of Transportation, Federal Highway Administration (FHWA), 2000, *Roundabouts: An Informational Guide*, Publication No. FHWA-RD-00-067, Washington, D.C.: FHWA. (http://www.tfhrc.gov/safety/00068.htm)

Civic Buildings and Public Open Space

Louv, Richard, 2005, *Last Child in the Woods: Saving our Children from Nature Deficit Disorder*, Chapel Hill, NC: Algonquin Books.

Marcus, Clare Cooper, and Carolyn Francis (editors), 1990, *People Places: Design Guidelines for Urban Open Space*, New York: Van Nostrand Reinhold.

Webb, Michael, 1990, *The City Square*, New York: Whitney Library of Design.

Whyte, William H., 2001, *The Social Life of Small Urban Spaces*, New York: Project for Public Spaces.

Parking

Association of Pedestrian and Bicycle Professionals (APBP), 2002, *Bicycle Parking Guidelines*, Washington, D.C.: APBP. (http://www.apbp.org/resource/resmgr/publications/bicycle_parking_guidelines.pdf)

Litman, Todd, 2006, *Parking Management Best Practices*, Chicago: Planners Press.

Metropolitan Transportation Commission (MTC), 2007, "Developing Parking Policies to Support Smart Growth in Local Jurisdictions: Best Practices," Oakland, CA: MTC. (http://www.mtc.ca.gov/planning/smart_growth/parking_study/April07/bestpractice_042307.pdf)

Nelson\Nygaard, 2005, "*Back-in Head-out Angled Parking*," San Francisco: Nelson\Nygaard. (http://www.hampdenhappenings.org/HCC_WEB/Zoning_Pdf/RAP/San_Francisco.pdf)

Shoup, Donald, 2005, *The High Cost of Free Parking*, Chicago: Planners Press.

Sorenson, Paul et al, 2008, *Moving Los Angeles: Short-Term Policy Options for Improving Transportation*, Santa Monica: RAND Corporation.